



Additional chart coverage may be found in CATP2, Catalog of Nautical Charts

SECTOR 6 — CHART INFORMATION

SECTOR 6

EAST COAST OF SWEDEN—LOVSTABUKTEN TO JARNASUDDE

Plan.—This sector describes the greater part of the Swedish coast bordering the S portion of the Gulf of Bothnia, between Lovstabukten and Jarnasudde. The descriptive sequence is S to N.

General Remarks

6.1 Tides—Currents.—Along the Swedish shore of the Gulf of Bothnia, the general set of the current is S in calm weather, with a tendency to set toward the land. The currents are affected by the wind. A change in the current often precedes a storm by an interval of several hours to a day.

The current in the Angermanalven river sets generally S through the estuary and is usually weak. However, during spring freshets the current may sometimes attain a considerable velocity at Nyland (63°00'N., 17°46'E.) and in the narrow passages.

Near Ostra and Vastra Finngrund (60°59'N., 18°36'E.) the current usually sets SE or ESE, and frequently attains a rate of 1 knot. The direction varies with sudden changes of wind and weather. In the approaches to Gavle (60°41'N., 17°10'E.), the current is weak and its direction variable.

Pilotage.—See [paragraph 5.1](#) and Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean, Baltic Sea, North Sea, and the Mediterranean Sea for information pertaining to vessels in Swedish waters.

The main pilot stations along this part of the coast are situated at Gavle, Sundsvall, and Ornskoldsvik.

The station at Gavle provides pilotage for the area lying between a line bearing 090° from Rodhall (60°36'N., 17°59'E.) and latitude 62°08'N (see [paragraph 6.7](#)).

The station at Sundsvall provides pilotage for the area lying between latitude 62°08'N and latitude 62°50'N, including Gaviksfjarden and Angermanalven (see [paragraph 6.31](#)). Requests for pilotage in this area must be made through the VTS station at Gavle (see [paragraph 6.7](#)).

The station at Ornskoldsvik provides pilotage for the area between a line bearing 140° through Norrbyskar (63°33'N., 19°52'E.) and latitude 62°50'N (see [paragraph 6.48](#)). Requests for pilotage in this area must be made through the VTS station at Lulea (see [paragraph 9.19](#)).

Regulations.—Channels leading through and into the Stockholm archipelago are subject to a mandatory Vessel Traffic Service (VTS) system. The information centers will pass navigational and traffic details as required. Reporting is mandatory for vessels over 300 grt or over 50m in length, as well as for vessels under tow that have a combined length of over 50m.

The Swedish authorities have instituted a system of restricted areas and semi-restricted areas throughout the coastal waters. The limits of these areas may best be seen on the chart. Vessels are generally permitted to transit these areas only through the approved channels, and with a pilot aboard. For further details, see Pub. 140, Sailing Directions (Planning

Guide) North Atlantic Ocean, Baltic Sea, North Sea, and the Mediterranean Sea.

Caution.—During the winter, many buoys in these waters are removed while others may be damaged or break adrift.

In the coastal waters within this sector, numerous logs may be found adrift at all times of the year.

Areas dangerous due to mines laid during World War II exist within the waters described in this sector. There is still a risk of danger in these areas when anchoring or carrying out any seabed activities.

Lovstabukten to Gavle

6.2 Lovstabukten (60°38'N., 17°45'E.), a large bay, is entered between Bjorn and a point on the mainland about 10.5 miles W. It is encumbered with numerous islets and dangers, and should not be entered without local knowledge. The shores of the bay are low and wooded.

Several small harbors, mostly used by fishing vessels and small craft, are situated within this bay. Timber rafts are assembled off some of these harbors.

Bjorn Light (60°38'N., 17°59'E.), described in [paragraph 5.11](#), is shown from the northernmost islet of a group of dangers extending up to about 2.5 miles N from the mainland coast, on the E side of Lovstabukten.

Boliviagrundet, a rocky shoal with a depth of 6.9m, lies about 2.4 miles E of Bjorn Light and is the outermost danger in this vicinity.

Campsgrund (60°42'N., 17°51'E.) lies about 5 miles NW of Bjorn Light in the approach to Lovstabukten. This shoal has a least depth of 8m and is marked by a lighted buoy.

Caution.—A firing and bombing practice exercise area, which extends 1.5 miles N from the shore, is situated off Norrskaten, in the NE part of Lovstabukten, about 3.5 miles SW of Bjorn Light.

6.3 Finngrund (60°58'N., 18°03'E.) lies about 40 miles offshore and fronts the approach to Gavlebukten. It consists of two extensive banks of sand and gravel, which may best be seen on the chart.

Ostra Banken, the outer bank, lies with its S extremity located about 21 miles NE of Bjorn Light. A shoal patch, with a least depth of 1.5m, lies near the S end of the bank and other patches, with depths of 3.2 to 3.5m, are located in the N part. The S end and E sides of this bank are marked by buoys.

The position of this bank can be easily distinguished during daylight as the color of the water, being dark at a greater depth, suddenly changes and becomes very light at the edges.

Finngrundet Light (60°59'N., 18°36'E.), equipped with a racon, is shown from a prominent tower, 25m high, standing 27 miles NE of Bjorn and 4 miles E of Ostra Banken.

An isolated shoal patch, with a least depth of 6.6m, lies 13 miles WNW of Finngrundet Light and is marked by a buoy.

Vastra Banken, the inner bank, lies about 6 miles W of Ostra Finngrund and consists of several shoal patches. The northeasternmost patch has a least depth of 0.6m and is marked by a lighted buoy moored on its E side.

Vastra Banken Light (60°53'N., 17°55'E.), equipped with a racon, is shown from a prominent tower, 27m high, standing on the S part of Vastra Banken, about 21 miles WSW of Finngrundet Light. A patch lying about 2 miles NNE of this light has a least depth of 3.2m and is marked by a buoy.

Utnallen, a shoal with a depth of 6.8m, lies about 4 miles WNW of Vastra Banken Light and is marked by a buoy.

Blockbanken, with a depth of 5.8m, lies about 5.5 miles SSW of Utnallen and consists of large boulders.

Sylen (61°15'N., 18°27'E.), an isolated shoal patch, lies about 16.5 miles NNW of Finngrund Light. It has a least depth of 9.4m and is marked by a lighted buoy.

Directions.—The coastal route leads NW from NNE of Bjorn Light. Vessels may pass NE of Campsgrund, SW of Vastra Banken Light, NE of Blockbanken, and WSW of Utnallen. They may then continue NNW to a position located E of Gashallan Light (60°00'N., 17°17'E.).

The depths along this route are irregular, especially between Blockbanken and Utnallen, where there are isolated shoal depths of less than 15m.

Approaches to Gavle

6.4 Gavlebukten is a bight lying between Bjorn and Gashallan, about 30 miles NW. The coast in this vicinity is generally low and wooded. The shores of the bight are fronted by numerous islands, islets, and shoals, which may best be seen on the chart.

The SW part of the bight fronts the port of Galve and is encumbered with numerous dangers, which lie up to about 8 miles offshore in places.

Iggon Light (60°52'N., 17°18'E.) is shown occasionally from a structure standing on the E side of an island lying close offshore, 8 miles S of Gashallan. The island is covered by dark, dense woods and is prominent from seaward.

Vicksellsgrundet, a large bank formed by several shoals, lies centered 3 miles NNE of Iggon Light and is the outermost danger in this vicinity. It has a least depth of 2m and is marked by buoys.

Eggegrund Light (60°44'N., 17°34'E.) is shown from a prominent tower, 26m high, standing on the SE end of an islet of the same name, lying about 13.5 miles WNW of Bjorn Light. Some houses are situated near the light tower. The islet is sandy, 5m high, partly wooded, and fringed by a narrow reef.

Purrutsgrund Light (60°47'N., 17°27'E.), equipped with a racon, is shown from a metal tower, 5m high, standing on a shoal lying 4.3 miles NW of Eggegrund Light. This light marks the SE extremity of the coastal bank, which extends up to about 4.5 miles seaward on the N side of the approach to the port of Galve.

Trodjehallan Light (60°48'N., 17°21'E.) is shown from a tower, 10m high, standing on a barren rock, 4m high, lying about 0.7 mile offshore, 3.2 miles WNW of Purrutsgrund Light.

Lovgrunds Rabbar is a large shoal area, with several rocks awash, lying between 1 mile and 4 miles NE of Purrutsgrund

Light. This shoal area is steep-to on its NW side and is marked by buoys.

Petres Bank, a detached gravel shoal, lies S of the SE end of Lovgrunds Rabbar, 2.8 miles NNE of Eggegrund Light. It has a least depth of 2.4m and is marked by a buoy.

Hansbadan, a shoal with a least depth of 5.9m, lies centered 1 mile ENE of Eggegrund Light and is marked at the N end by a buoy.

Grussankan, a narrow shoal, extends about 0.5 mile SSE from the S end of Hansbadan. It has a least depth of 10.4m and is marked at its S end by a buoy.

Vakaren lies about 1.2 miles S of the S end of Grussankan and 1 mile SE of Eggegrund Light. This shoal has a least depth of 8m and is marked on its N side by a lighted buoy. It is located at the N end of an area of foul ground and dangerous rocks, which extends about 4 miles NNE from the mainland on the S side of the approach to the port of Galve.

6.5 Skraddarhallan Light (60°46'N., 17°22'E.) is shown from a structure standing on an islet about 0.3 mile offshore, 3 miles WSW of Purrutsgrund Light.

Vitgrund and Norrskar are two low islets, fringed by shoals, lying 1 mile E and 1.3 miles ENE, respectively, of Skraddarhallan Light.

Limo Light (60°43'N., 17°22'E.) is shown from a framework tower, 21m high, standing on an island of the same name. The island is wooded, 15m high, and lies in the middle of the approach, 6 miles W of Eggegrund Light.

Ytteriskan Light (60°44'N., 17°20'E.) is shown from a metal floodlit tower, 5m high, standing on a rock lying about 1.3 miles NNW of Limo Light.

Bonan Light (60°44'N., 17°19'E.) is shown from a tower, 10m high, standing on the mainland, 0.6 mile NW of Ytteriskan Light.

Lovgrund, 10m high and partly wooded, lies 3.5 miles WNW of Eggegrund Light. A chapel and some cottages stand on the NE part of this island.

Sjalstenarna lies 2 miles W of Eggegrund Light and consists of two bare islets fringed by partly awash rocks.

Grasjalsbadan, a wooded islet, lies 0.8 mile W of Sjalstenarne and is also fringed by rocks. Sjalstensgrund, a shoal with a least depth of 1.4m, lies about midway between Sjalstenarna and Grasjalsbadan.

Numerous other shoals and dangers, with depths of less than 10m, lie in the approaches and may best be seen on the chart.

Limo Island lies in the NE part of an extensive area of rocks and shoals which fronts the port. Orarnas, a low and wooded island, lies 1 mile SSW of Limo, in the S part of this area.

Holmuddsrannan (60°44'N., 17°20'E.), entered close SW of Ytteriskan Light, is the main channel leading to the port. This channel, which is about 1 mile long and 60m wide, extends SW through the N part of the above area of rocks and shoals.

Caution.—Several submarine cables lie in the approaches to the W of Eggegrund Island and may best be seen on the chart.

6.6 Approach routes.—There are three main approach routes and one inshore channel leading to the port entrance.

The **East Deep-Water Route**, which is authorized for drafts up to 10.4m, leads W for about 18 miles from a position located NE of Bjorn Light. It passes N of Campsgrund,

between Vakaren and Grussankan, and S of Eggegrund Light to a position located 0.7 mile S of Grasjalsbadan. The route continues WNW for about 4 miles using the white sector of Bonan Light. It then passes close N of Ytteriskan Light and leads SW to the outer entrance of Holmuddsrannan.

Vessels requiring more maneuvering room may head NW, using the white sector of Skraddarhallan Light, from the position located S of Grasjalsbadan before changing course to SW.

The **East Alternative Route**, which is authorized for drafts up to 9.5m, leads WNW for about 17 miles from a position located NE of Bjorn Light. It passes NNE of Campsgrund, between Hansbadan and Petres Bank, and NNE of Eggegrund Light to a position located 0.7 mile S of Purutsgrund Light. The route then continues SW for 1.5 miles and WSW for 2.5 miles to the outer entrance of Holmuddsrannan. It passes between Vitgrund and Lovgrund, and close N of Ytteriskan Light.

At night, vessels may pass between Hansbadan and Petres Bank by using the white sector of Trodjarahallan Light. When about 0.4 mile E of Purutsgrund Light, they should change course to the SW and follow the route leading between Vitgrund and Lovgrund. Vessels may then use the white sector of Bonan Light to approach the outer entrance of Holmuddsrannan. This route may be used in the winter.

The **North Route** leads SE for about 5 miles from a position located off Iggon Light. It passes between Purutsgrund Light and the SW end of Lovgrunds Rabbar. The route then leads SW and joins the East Alternative Route. At night, the route initially leads SE using the white sector of Eggegrund Light. This route has a least depth of 12.9m up to the vicinity of Purutsgrund Light, but, after joining the East Alternative Route it is only authorized for drafts up to 9.5m.

The **Inshore Channel**, which is authorized for drafts up to 3.7m, leads S and SSE for 5 miles from a position SSE of Iggon Light. It passes close E of Trodjarahallan Light and Skraddarhallan Light. Vessels should then steer SW to the outer entrance of Holmuddsrannan. The channel is very narrow in places and should be used only by small vessels. Local knowledge is advised.

Caution.—A mined area, through which surface navigation is permitted, lies across Holmuddsrannan and the NE end of Yttrefjarden. Vessels transiting the area during a thunderstorm do so at their own risk.

Gavle (60°41'N., 17°10'E.)

World Port Index No. 25590

6.7 Gavle (Gefle), one of the oldest towns in Sweden, is situated at the mouth of the Gavle River. The port consists of Yttrefjarden, the outer harbor and roadstead, and Inre Fjarden, the small natural inner harbor.

Tides—Currents.—Normal HW is approximately 0.3m above mean sea level; normal LW is approximately 0.2m below. Gales from the NE cause an exceptionally high HW level, which is usually followed by an exceptionally low LW level; the former is as much as 1.2m above mean sea level while the latter is much as 0.9m below mean sea level.

The current in the approaches is weak and variable in direction. Within Yttrefjarden, there is a slight current generally setting E.

Ice.—Ice obstructs navigation from the end of January to the end of March, but the harbor is normally kept open by ice-breakers.

Depths—Limitations.—Yttrefjarden, the outer harbor and roadstead of the port, can be entered via two channels. Bak-harsrannan, the S channel, leads between the islands of Limo and Orarna. It is available only for small craft, with drafts up to 2.7m, during daylight hours.

Holmuddsrannan, the N and main channel, has a dredged depth of 10.9m (1993) and is authorized for vessels with drafts up to 10.4m. Vessels up to 220m in length may transit during daylight.

For routes and draft limitations in the approaches, see [paragraph 6.6](#).

Inre Fjarden, the inner harbor, fronts the town and is closed to commercial shipping. The entrance channel is no longer dredged and is only used by pleasure craft.

The main facilities are situated in the vicinity of Frederikskans, at the W end of Yttrefjarden.

New Oil Quay, at the outer end on the N side, is 70m long and has a depth of 10.8m alongside.

East Basin has a quay, 575m long, at its W side, with a depth of 9.3m alongside. Vessels, with drafts up to 8.9m, can be handled here. A floating quay installation, 90m long, is situated at the E side of the basin and has a depth of 6m alongside. A quay, 75m long, is situated at the N end of this basin and has a depth of 8.3m alongside.

South Quay and Southwest Quay provide 570m of total berthage, with a depth of 7.7m alongside. Vessels, with drafts up to 7.4m, can be accommodated here. A ro-ro berth is situated at the W end of Southwest Quay.

Old Oil Quay is 85m long and has a depth of 7.7m alongside. Coastal Tanker Quay, consisting of a wharf with a breasting dolphin, provides 75m of berthage with a depth of 5.4m alongside.

Granudden Terminal, on the S side, has two timber product berths. The E berth is 200m long, with a depth of 10.9m alongside; the W berth is 150m long with depth of 9.4m alongside.

There are facilities for general cargo, bulk, tanker, ro-ro, and timber product vessels. The port can accommodate vessels up to 220m in length, 28m beam, and 10.4m draft.

For additional outport facilities, see [paragraph 6.9](#).

Aspect.—The approach routes are indicated by lighted ranges and directional sector lights. Holmuddsrannan, the main entrance channel, is marked by lighted buoys and lighted floodlit beacons.

Herosgrund Light is shown from a floodlit tower standing in the vicinity of a group of shoals lying within Yttrefjarden, about 1 mile SW of the inner entrance of Holmuddsrannan.

A prominent wind generator, 54m high, stands close N of the New Oil Quay.

Pilotage.—The pilotage area for Gavle lies between a line bearing 090° from Rodhall (60° 36'N., 17° 59'E.) and latitude 62° 08'N.

Pilotage is compulsory for vessels, as follows:

1. All Category 1 vessels.

2. Category 2 vessels of 80m in length or 15m beam and over.
3. Category 3 vessels of 90m in length or 16m beam and over.

Vessels should send an ETA and request for pilotage 5 hours in advance. All requests for pilotage in the area (including Sundsvall, Hudiksvall, and Soderhamn) must be made through the Gavle VTS station.

Pilots board vessels, as follows:

1. For Soderhamn and Ljusnefjarden—in position 61°12.9'N, 17°20.9'E.
2. For Gavle—close S of Grasjalsbadan (60°43.5'N., 17°27.5'E.).
3. For Hudiksvall—in position 61°15.9'N, 17°24.0'E or, by special arrangement, about 1.5 miles S of Hurnsudde in position 61°35.7'N, 17°29.0'E.

Regulations.—All vessels must proceed through Holmuddsrannan, the main entrance channel, at a slow speed.

Vessels entering Yttrefjarden have priority in the channel over those leaving. However, towed vessels have priority over all other vessels.

Vessels over 172m in length or 7.35m draft are prohibited from passing through Holmuddsrannan during darkness.

Vessels with drafts over 9m must use tugs when passing through Holmuddsrannan.

Berthing at the New Oil Quay at night is restricted to tankers of 172m in length, 25m beam, and 7.5m draft.

Signals.—A Vessel Traffic Service (VTS) station has been established at Gavle. (E-mail: vtsgavle@sjofartsverket.se).

Anchorage.—Three anchorage areas, designated D, E, and F, are situated in the S part of Yttrefjarden. They have depths of 11 to 14m, mud and clay, and may best be seen on the chart.

Caution.—Prohibited anchorage areas, the limits of which may best be seen on the chart, are situated in the SW part of Yttrefjarden, close N of Herosgrund Light, and in the vicinity of Holmuddsrannan, the main entrance channel.

6.8 Skutskar-Harnas (60°39'N., 17°24'E.) ([World Port Index No. 25550](#)), a small harbor, is situated 18 miles W of Bjorn, in the S approach to Galve. It is well-protected by two breakwaters. This harbor serves the towns of Skutskar and Harnas, which stand, respectively, on its SE and W sides.

Ice.—The harbor is normally closed because of ice from early January to early April.

Depths—Limitations.—The harbor is approached by using the East Deep-Water Route for Galve (see [paragraph 6.6](#)). A channel, which is authorized for drafts up to 6.5m, leads SW to the harbor entrance.

Massakajen is the main wood pulp pier. It has a berth, 245m long, with a depth of 6.9m alongside, on the W side; a berth, 95m long, with a depth of 6.1m alongside, is located on the E side.

Virkeskajen, located in the E part of the harbor, is a quay, 300m long. A berth, 90m long, is situated at the outer end and has a depth of 6.8 alongside. The remainder of the quay is closed to vessels.

Oijekarjen, an oil berth, is formed by two caissons. It is 52m long and has a depth of 6.8m alongside.

It is reported (1998) that the harbor is used only for the import of pulpwood.

Aspect.—The approach channel is indicated by a lighted range and a directional sector light. The entrance channel is marked by buoys. A sector light is shown from a mast standing at the head of the W breakwater.

A church, with a prominent black pointed spire, stands in the town of Skutskar. The tower and chimneys of the woodpulp factory, standing at the SW side of the harbor, are clearly visible from seaward. A prominent water tower is situated at the SE side of the harbor.

Pilotage.—Pilots are provided by the Gavle pilot station.

Anchorage.—Vessels unable to complete loading in the harbor usually anchor about 0.5 mile NE of the entrance, in depths of 15 to 17m, sand and stones.

Caution.—Local knowledge is required and large vessels should not enter the harbor during darkness.

6.9 Karskar (60°41'N., 17°16'E.) ([World Port Index No. 25570](#)), an outport of Galve, is situated in the S part of Yttrefjarden. It is approached through a channel authorized for drafts up to 7.8m.

There is an oil pier, 195m long, with berths for tankers on each side. The maximum permitted drafts are 6.5m on the W side and 7.8m on the E side.

There are also two quays. One is 90m long, with a depth of 4.8m alongside; the other is 110m long, with depths of 4.8 to 6.3m alongside.

The pier at Kastet, 0.5 mile NW of Kaskar, is reported to be disused.

Langharen (60°41'N., 17°17'E.), another outport of Galve, is situated in the S part of Yttrefjarden, close E of Karskar. It consists of a tanker terminal. The berth is 60m long and has a depth of 10.9m alongside. Tankers up to 220m in length and 10.4m draft can be accommodated. Berthing is carried out during daylight only and vessels enter stern first.

Gavle to Ljusnefjarden

6.10 Gashallan (61°01'N., 17°17'E.), a barren islet, lies about 0.5 mile offshore and is 6m high. A main light is shown from a prominent tower, 8m high, standing on this islet.

Knaggen, a group of shoals, extends up to about 0.8 mile E and SE of the light. This group has a least depth of 3.4m and is marked by a buoy.

The approaches to Norrsundet include the area lying between Iggon Light (60°52'N., 17°18'E.) and Gashallan, about 8 miles N.

The mainland and larger islands bordering this area are covered with forest. The shore is fronted by numerous islands, islets, rocks, and shoals, which may best be seen on the chart.

Several anchorages and small harbors of refuge lie along this part of the coast, but local knowledge is required for entry.

Vicksellsgrundet, a large shoal bank, lies on the S side of the approach and has been previously described in [paragraph 6.2](#).

A group of small islands, islets, and shoals, which may be best seen on the chart, fronts Norrsundet and extends about 3 miles NE from the coast.

Bjorn Beacon (60°57.0'N., 17°13.3'E.), a framework mast, 11m high, stands on a barren islet lying on the outer part of this group.

Forstugund, a shoal patch, lies about 1.7 miles ESE of Bjorn Beacon. It has a least depth of 3.4m and is marked by a buoy. Valkommen, a shoal patch, lies about 1 mile ENE of Bjorn Beacon. It has a least depth of 7m and is marked by a buoy. These two shoal patches form the outermost dangers in the approach to Norrsundet.

Saltarsfjorden (60°56'N., 17°11'E.), a bay lying close S of Norrsundet, provides anchorage, exposed to E winds, in a depth of 18m, sand. The entrance lies about 1.3 miles SW of Bjorn Beacon and is encumbered by a group of dangerous shoals, known as Saltarsgrundet, on the N side.

This anchorage is usually icebound from the end of January to the beginning of April. The approach is indicated by range beacons. Vessels should head in a SW direction and pass between Forstugund and Valkommen shoals. When within about 0.4 mile of the shore, vessels should change course and head W into the bay. Local knowledge is advised.

6.11 Norrsundet (60°56'N., 17°10'E.) ([World Port Index No. 25610](#)), a small and well-sheltered harbor, is situated 5 miles SW of Gashallan Light. It handles timber products.

Ice.—Ice usually obstructs the harbor from the end of January to the beginning of April.

Depths—Limitations.—From a position located about 2 miles SSE of Gashallan Light, the main approach route leads WSW for 5 miles between the dangers fronting the port. It passes about 0.4 mile NNW of Valkommen shoal and Bjorn Beacon. A dredged entrance channel, which is authorized for drafts up to 6.4m, then continues SW and leads into the harbor.

A secondary approach route, authorized for drafts up to 5.4m, leads from S. From a position NE of Iggon Light, the route leads in a NW direction for about 6 miles and joins the main route, 1.3 miles NE of Bjorn Beacon. It passes close SW of the SW side of Vicksellsgrundet shoals, close NE of Forstugund shoal, and close ENE of Valkommen shoal.

The commercial facilities are situated on the SW side of the harbor. Trautlastingskajen, a timber-loading quay, is 91m long and has depths of 3.5 to 4.3m alongside; and Massakajen, a pulp quay, is 172m long and has a depth of 6.8m alongside.

Vessels up to 135m in length and 6.4m draft can be accommodated. Vessels entering at night are limited to a length of 100m.

Aspect.—The harbor lies within an inlet, which is formed by the island of Granskar, on the N side, and the peninsula of Farholmen, on the S side. The island of Granskar is connected to the mainland by causeways.

The approach route is indicated by a sector light. The entrance channel is indicated by a lighted range and is marked by buoys.

A prominent chimney stands in the vicinity of the pulp mill and is illuminated at night.

Pilotage.—Pilots may be obtained from the Gavle pilot station (see [paragraph 6.7](#)).

Anchorage.—Anchorage is available close N of the island of Dodmanskar (60°57'N., 17°12'E.), about 0.7 mile W of Bjorn Beacon. This inner roadstead has depths of 15 to 17m, sand, gravel, and clay.

Caution.—It is reported (2000) that severe magnetic disturbances have been experienced in the approach to the port.

6.12 Kuson (61°02'N., 17°14'E.), a wooded island, lies 2 miles NW of Gashallan Light. This island is 33m high and is fringed by shoals extending up to 1.2 miles E of it.

A prominent radio mast stands 8 miles WNW of Kuson.

Sundsmars Redd (61°01'N., 17°13'E.), a sheltered roadstead, lies 2.3 miles WNW of Gasholmen Light. It is located between the peninsula of Sundsmarnaset, 41m high, and the SW part of Kuson. This roadstead is considered to be one of the best refuge anchorages along this part of the coast. It is usually icebound from the middle of December to the end of April.

The anchorage has depths of 10 to 13m, stones, sand, and clay. It may be entered from the N via a channel leading S and passing close W of the Kuson or from the E via a channel, available for drafts up to 5m, leading W and passing S of Kuson. Both channels are buoyed. A reef extends from the S side of Kuson and constricts the fairway to a width of about 180m. Local knowledge is advised.

6.13 Between Kuson and Ljusnefjorden, about 9 miles N, the coast is generally low and wooded. The shore is fronted by a number of islands, islets, and shoals, which may best be seen on the chart. Only the outer dangers are described below.

An extensive area of islets, rocks, and shoals fronts the mainland shore to the N of Kuson and extends up to about 5 miles NNE of this island.

Tupparna (61°10'N., 17°20'E.), a low and partly wooded islet, lies about 4 miles offshore, at the NE end of this area. Tuppstorggrund, a shoal with a least depth of 2.4m, lies about 0.4 mile E of this islet, near the edge of the area.

Reveljen (61°07'N., 17°21'E.), a detached shoal, lies about 1.3 miles E of Tupparna. It has a least depth of 5.7m and is marked by a buoy.

Storjungfrun (61°10'N., 17°20'E.), a densely wooded island, lies about 4 miles offshore and is 22m high. The W side of the island is clear of dangers. However, the E side and S end of the island are fronted by dangers and should not be approached within 1 mile.

A main light is shown from a prominent tower, 21m high, standing on the NE end of the island. A number of cottages and a chapel are situated in the vicinity of the light.

Anchorage may be obtained by vessels with local knowledge close to the W side of this island, about 1 mile SSW of Kalkudden, the W extremity, in depths of 9 to 18m, but the bottom shelves steeply. Anchorage may also be obtained within an area centered 1 mile NW of Kalkudden.

Storgrundet (61°09'N., 17°27'E.), an extensive shoal, lies centered 3 miles E of Storjungfrun and consists of gravel, sand, and shingle. It has a least depth of 0.5m and is marked on the E and W sides by buoys.

Enskar (61°14'N., 17°17'E.), an indented island, lies 2 miles offshore, about 4.5 miles NNW of Storjungfrun Light. It is located on the outer part of an extensive area of dangers fronting the coast. Klumpudden Light is shown from a structure standing on the N part of this island.

Ellegrund, a shoal with a depth of 1.1m, lies about 0.5 mile E of the SE end of Enskar. A detached shoal patch, with a least depth of 8.4m, lies 0.7 mile ENE of Ellegrund and is the outermost danger in this vicinity.

Caution.—Permanent fishing equipment may be found around Storjungfrun.

A submarine pipeline, which may best be seen on the chart, extends between the W side of Storjungfrun and the mainland.

Ljusnefjarden

6.14 Ljusnefjarden (61°13'N., 17°12'E.) is entered about 4 miles WNW of the N end of Storjungfrun. The approach to the inlet lies between Storjungfrun and Enskar, 4.5 miles NNW. The S side of the approach is comparatively free from dangers, but on the N side, shoals extend up to about 3.5 miles from the mainland.

The harbors of Vallvik, Ljusne, Orrskarshammen, and Ala are situated within this large inlet.

Blomman (61°12'N., 17°16'E.), a shoal with a least depth of 7m, lies about 2 miles S of the SW end of Enskar and is marked by a lighted buoy. It is the outermost shoal on the SE side of the dangers bordering the N approach to Ljusnefjarden.

Fabodvallshararna (61°11.5'N., 17°10.7'E.), a group of wooded islets, lies near the shore, close within the S entrance point of Ljusnefjarden.

Vallvik Light (61°11.5'N., 17°10.8'E.) is shown from a tower standing on the S end of the southernmost islet of Fabodvallshararna.

Saggrund (61°12'N., 17°12'E.), a shoal with a least depth of 1.3m, lies about 0.5 mile NE of Fabodvallshararna and is marked by a buoy. It is the outermost shoal on the SW side of the dangers bordering the N approach to Ljusnefjard.

Storgrytan, a sparsely wooded islet, lies about 0.5 mile NW of the NW end of Fabodvallshararna and steep, rugged reddish rocks fringe its NE side. A light is shown from a structure standing at the N extremity of this islet.

Lekskaraen, a shoal with rocks awash, lies about 0.3 mile NNE of Storgrytan Light. It is marked by a beacon and two buoys.

Nestorsgrund, a shoal with a least depth of 3.3m, lies about 0.4 mile ENE of WSW Storgrytan Light and is marked by a lighted buoy.

Abrahamsharen, an islet, lies about 1 mile ENE of Storgrytan Light, near the S end of the dangers extending S from the mainland.

Ice.—The harbors within the inlet are usually icebound between February and April.

Aspect.—The main approach route leading into the inlet is indicated by a lighted range and a directional sector light.

Vardberget, a rounded hill, stands on the NW side of the inlet, 1.8 miles NW of Vallvik Light. It is 50m high and prominent from seaward.

A number of conspicuous chimneys, 65m high, stand in the vicinity of the woodpulp factory, 0.2 mile S of Vallvik Light. A tower is situated close S of the factory.

Pilotage.—Pilots for the harbors in Ljusnefjarden are provided by the Gavle pilot station (see [paragraph 6.7](#)). Pilotage should be requested 24 hours in advance. It is reported (2001) that vessels must contact VTS Gavle on VHF channel 13 prior to entering the harbor area. Pilots board about 2.8 miles N of Storjungfrun Light.

Directions.—The main approach route, which is authorized for drafts up to 11.1m, leads NNW for about 10 miles from a

position located E of Gashallan Light. It passes between the island of Storjungfrun and Storgrundet shoal. The route then continues W for about 4.5 miles and leads into the S part of the inlet. This section of the route passes S of Blomman shoal and is indicated by the white sector of Vallvik Light.

From the N, a route, which passes 1.6 miles ESE of the SE end of Enskar, leads SSW and joins the main approach route about 1.7 miles NW of Storjungfrun Light.

An alternate route, which is authorized for drafts up to 7.5m, leads in a NW direction for about 7 miles to a position located 0.6 mile E of Vallvik Light, at the inlet entrance. It passes between Reveljen shoal and the dangers fronting the S end of Storjungfrun island. The route then continues NW between the mainland and the W side of Storjungfrun.

An inshore route, which is authorized for drafts up to 5.1m, leads inside the dangers fronting the coast between Gashallan Light and Storjungfrun. The channel is narrow in places and local knowledge is required. This route is usually blocked by ice between December and April.

6.15 Vallvik (61°11'N., 17°10'E.) ([World Port Index No. 25640](#)), a small industrial harbor, is situated near the S entrance point of Ljusnefjarden.

Depths—Limitations.—The harbor can be entered through two channels, which are both authorized for drafts up to 7.5m.

The shorter channel leads WNW for 0.7 mile from a position located 0.6 mile E of Vallvik Light. It then continues SW between Fabodvallshararna and Storgrytan. This part of the channel is marked by buoys and is very narrow in places.

The longer channel leads NW for 1.3 miles from a position located 0.6 mile E of Vallvik Light. It passes SW of Saggrund and Nestorsgrund. The channel then continues SW, rounds the N end of Storgrytan, and leads SE for 0.7 mile to the harbor.

The main pier extends NW into the harbor and is 200m long. It has depths of 5 to 8.1m alongside the NE side. The berth at the SE side is 70m long and has depths of 5.3 to 7.4m alongside.

A quay extends about 190m ESE from the root of the pier on the NE side. It has depths of 2.4 to 5m alongside, but is no longer used by commercial vessels.

Aspect.—The inner part of the entrance channel is indicated by a lighted range and is marked by buoys.

Anchorage.—Vessels can anchor, in depths of 12 to 15m, clay, N or S of Nestorsgrund, staying clear of the harbor entrance channels.

Well-sheltered anchorage may also be obtained, in a depth of 10, clay, about 0.3 mile WSW of Lekskaraen.

Caution.—Vessels over 5,000 dwt are advised to enter or leave the harbor during daylight hours only.

6.16 Ljusne (61°12'N., 17°08'E.) ([World Port Index No. 25650](#)), a small commercial and fishing harbor, is situated at the W side of Ljusnefjarden, at the mouth of a river.

Depths—Limitations.—The harbor is initially approached by using the longer channel to Vallvik. From a position located N of Storgrytan, a buoyed fairway, which is authorized for drafts up to 3.6m, leads W to the entrance.

The commercial quay, on the N side of the harbor, is 100m long and has a depth of 4.5m alongside. The fishing quay, on

the S side of the harbor, is 80m long and has a depth of 4m alongside.

A quay extends about 190m ESE from the root of the pier on the NE side. It has depth of 2.4 to 5m alongside, but is no longer used by commercial vessels.

Aspect.—The inner part of the entrance channel is indicated by lighted ranges and is marked by buoys.

Anchorage.—Vessels may find well-sheltered anchorage, in a depth of 10m, clay, W of Storgrytan.

6.17 Orrskarshamnen (61°13'N., 17°10'E.), a small commercial harbor, is situated at the NW side of Ljusnefjarden.

Depths—Limitations.—From a position located 0.6 mile E of Vallvik Light, a buoyed channel, 110m wide, leads in a NW direction for about 1.5 miles to the harbor. It passes SW of Saggrund and NE of Nestorsgrund. This channel is authorized for drafts up to 11.1m.

A concrete pier, equipped with a conveyor system for loading wood chips, is situated in the S part of the harbor. The berth on the E side of the pier is 100m long and has a depth of 11.8m alongside. The berth on the W side is 90m long and has a depth of 10.8m alongside.

A quay, situated close NW of the pier, has a berth, 100m long, with a depth of 10.4m alongside.

Aspect.—The inner part of the entrance channel is indicated by a lighted range.

6.18 Ala (61°13'N., 17°10'E.), a small commercial harbor, is situated at the N side of Ljusnefjarden.

Depths—Limitations.—From a position located 0.6 mile E of Vallvik Light, the channel leads in a NNW direction for about 1.7 miles to the harbor. It passes close WSW of Saggrund and between Nestorsgrund shoal and the islet of Abrahamsharen. This channel is authorized for drafts up to 7.4m.

A concrete pier, 160m long, extends ESE into the harbor and is used for exporting timber products. The berth on the S side of this pier is 120m long and has depths of 7.7 to 8m alongside. The berth on the N side is 130m long and has depths of 5.8 to 5.9m alongside.

Aspect.—The inner part of the entrance channel is indicated by a lighted range and is marked by buoys.

Caution.—Vessels with drafts over 5.5m must enter during daylight.

Ljusnefjarden to Hudiksvall

6.19 Hallgrund Light (61°17'N., 17°24'E.), equipped with a racon, is shown from a prominent floodlit tower, 23m high, standing on a rock awash, 4 miles NE of Enskar island. Shoals, with depth of less than 10m, extend up to about 0.8 mile NE and 0.4 mile SW of the light.

Soderhamnsfjarden (61°17'N., 17°10'E.), entered 3.5 miles W of Hallgrund Light, extends about 5.5 miles NW. The entrance to this inlet lies between the N side of Enskar and the E end of Skaton peninsula, 2.1 miles N.

The approaches and entrance to Soderhamnsfjarden are encumbered by numerous small islands, islets, rocks, and shoals, which may best be seen on the chart.

Norrutharet Light (61°16'N., 17°18'E.) is shown from a prominent tower, 10m high, standing on the N end of a small island, 3.2 miles WSW of Hallgrund Light.

Storgrund, a shoal area with a least depth of 0.6m, lies centered 1 mile ESE of Norrutharet Light. It is marked by buoys and is the outermost danger on the S side of the approach to the inlet.

Otterhallan Light (61°16'N., 17°18'E.), equipped with a racon, is shown from a framework tower standing on a red rock lying 1.5 miles WNW of Norrutharet Light.

Caution.—A submarine cable, which may best be seen on the chart, extends between Hallgrund Light and the Skaton peninsula.

6.20 Soderhamn (61°18'N., 17°05'E.) ([World Port Index No. 25720](#)) is situated at the head of Soderhamnsfjarden. The port includes the facilities at Stugsund, in the NW part of the inlet; at Sandarne, in the SW part; and at Langror, close N of Sandarne.

Tides—Currents.—The water level normally varies from 0.6m above to 0.4 below mean level. A higher level occurs with S and W winds, a lower level with N winds.

Currents in the approach to the inlet are negligible.

Ice.—In the Soderhamn archipelago, ice usually occurs from early January to early April. Shipping channels are kept open with the aid of icebreakers.

Depths—Limitations.—The main approach route leads W for about 5 miles from a position located 0.8 mile S of Hallgrund Light. It passes N of Storgrund, N of Norrutharet Light, and S of the dangers fronting the S side of Skaton peninsula. A dredged entrance channel, which is authorized for drafts up to 7.9m, then leads W and passes S of Otterhallan Light. It is 1 mile long and 60m wide.

The branch channel leading WSW to Sandarne is authorized for drafts up to 6.6m.

The branch channel leading NW and WSW to Langror is authorized for drafts up to 7.9m.

The branch channel leading NW to Stugsund is authorized for drafts up to 5.7m. The continuing channel leading NW to Soderhamn is authorized for drafts up to 2.5m.

Soderhamn has 1,600m of berthage, with a depth of 2m alongside. It is used only by recreational craft.

Stugsund has 900m of berthage, with depths of 5.2 to 5.9m alongside. It has facilities for handling bulk cargoes.

Langror has a quay, 80 long, with a depth of 8.3m alongside. It has facilities for handling oil and general cargoes. Vessels up to 180m in length and 7.9m draft can be accommodated.

Sandarne has a quay, 438m long, with a depth of 7.1m alongside. It has facilities for handling liquid resin.

Aspect.—The entrance channels are indicated by lighted ranges and are marked by buoys.

A prominent chimney, 75m high, stands at Sandarne; and a number of conspicuous silos are situated at Stugsund.

Skeppskolsberget, 322m high, stands about 13.5 miles WSW of Soderhamn. This prominent hill resembles the keel of a ship turned bottom up.

An aeronautical light is shown from a structure, 56m high, standing in the vicinity of the airport, about 2 miles W of Sandarne.

Pilotage.—Pilotage is compulsory. Pilots must be requested through Galve VTS (see [paragraph 6.7](#)). Pilots may be contacted by VHF and board about 1.5 miles S of Hallgrund Light.

Regulations.—Speed restrictions apply within the entrance channels.

From the vicinity of Otterhallan Light, vessels proceeding to Langror must be accompanied by tugs. Vessels can berth at Langror only during daylight.

Anchorage.—Lilljungfruns Redd, located 1 mile SW of Norrutharet Light and 0.4 mile N of Enskar, provides anchorage, in depths of 11 to 20m, mud and rock. Vessels can enter this roadstead through a branch channel, which is authorized for drafts up to 8.9m, to complete loading if necessary.

Branthalls Redd lies W of the island of Branthall, 1.1 miles WSW of Otterhallan Light. This roadstead provides anchorage, in depths of 7 to 13m, mud.

Prastholms Redd lies close NE of Langror. This roadstead provides anchorage, in a depth of 7m, mud.

Caution.—During winter, an ice-bridge is laid out between Stugsund and the N side of the inlet, 100m NE. Traffic signals are exhibited. A white light indicates that the bridge is open for the passage of vessels. A red light indicates that the bridge is closed and the passage of vessels is prohibited.

6.21 The coast between Hallgrund Light and the island of Agon, 16 miles N, is greatly indented. The shore is fronted by numerous small islands, islets, rocks, and shoals, which extend up to 4.5 miles seaward in places and may best be seen on the chart. Only the outermost of these dangers are described below.

Several local fishing and small craft harbors are located along this stretch of coast but there are no commercial ports.

Yttergrund (61°18'N., 17°21'E.), a large shoal bank, lies centered 1.8 miles WNW of Hallgrund Light. It has a least depth of 3m and is marked by buoys. Several detached shoal patches, with depth of less than 8m, lie between this bank and the light.

Skroveln, a shoal with a least depth of 0.8m, lies 2.3 miles W of Hallgrund Light and is marked by a buoy. This shoal is located at the S end of an extensive area of foul ground, which fronts the mainland peninsula of Stalnaset (61°19'N., 17°14'E.) and extends up to about 2 miles seaward.

Prastgrundet (61°21'N., 17°20'E.), 10m high, lies 4.5 miles NNW of Hallgrund Light. The greater part of this island is wooded, but the S end is barren except for some large boulders. A light is shown from a tower, 6m high, standing on the SW side of the island.

Foul ground and shallow shoals extend up to about 1 mile NE and 0.8 mile SW of Prastgrundet.

Vitgrund Light (61°23'N., 17°12'E.) is shown from a framework tower, 5m high, standing on the N part of an islet lying 4.7 miles NW of Prastgrundet Light. This islet lies 2.1 miles offshore, on an extensive chain of dangers fronting the coast.

Tattingen (61°26'N., 17°17'E.), with a least depth of 5.9m, is a large shoal bank lying 3.8 miles NE of Vitgrund Light. This bank is located 2.3 miles offshore and is the outermost danger in this vicinity.

Storgrund, with above-water rocks, is a shoal lying centered about 0.7 mile SW of Tattingen.

Fiske (61°31'N., 17°13'E.), marked by a light, is an islet lying about 5 miles NNW of Tattingen, in the outer approach to Enhammarsfjorden. Shoal patches, with depths of less than 10m, lie up to about 1.5 miles SE of Fiske Light.

Idensgrund, a detached shoal with a least depth of 3.6m, lies about 1.3 miles NE of Fiske Light.

6.22 Agon (61°33'N., 17°27'E.), a wooded island, lies at the outer end of a chain of islands, which extends E for about 7 miles from Varnasudde, on the mainland.

Ago Light (61°32.5'N., 17°28.0'E.) is shown from a prominent tower, 15m high, standing at the E extremity of Agon.

Small vessels, with local knowledge, may obtain sheltered anchorage, in depths of 7 to 25m, gravel and mud, within a narrow inlet indenting the SW side of the island. A channel, authorized for drafts up to 5.8m, leads to this anchorage.

Tihalan, an islet, lies 1 mile S of Agon and is located near the center of a group of dangers, about 3 miles long, which front the S side of the island.

Gretasklackar (61°31'N., 17°47'E.), a group of three shoals with a least depth of 10.3m, lies 9 miles ESE of Ago Light.

Caution.—Due to the numerous shoals lying between Prastgrundet and the mainland, vessels passing W of this island require local knowledge.

Approaches to Hudiksvall

6.23 Hudiksvall (61°35'N., 17°28'E.), an extensive inlet, is encumbered by numerous small islands, rocks, and shoals, which may best be seen on the chart. The shores are wooded and hilly.

Iggesund and Hudiksvall are the main commercial ports situated within this inlet. Krakon (61°34'N., 17°20'E.), Njutanger (61°36'N., 17°04'E.), Holick (61°38'N., 17°26'E.), Karingon (61°39'N., 17°14'E.), Saltvik (61°41'N., 17°15'E.), and Lingaro (61°43'N., 17°15'E.) are harbors used only by small craft and pleasure boats. There are also several marinas.

The approach to Hudiksvall is bordered, on the S side, by a chain of islands extending 7 miles E from the mainland. Agon is the outermost island of this chain (see [paragraph 6.22](#)). The approach, on the N side, is bordered by the S side of the peninsula of Hornslandet, located 4.8 miles N.

The peninsula of Hornslandet is 115m high and partly wooded. At a distance, from the NE, it appears to be separated from the mainland. The E side of this peninsula is light colored and moderately steep.

Kraskar Light (61°34'N., 17°20'E.) is shown from a prominent tower, 6m high, standing on the N extremity of Krakon island, 4.3 miles WNW of Ago Light.

Holickskar Light (61°37'N., 17°27'E.) is shown from a tower, 6m high, standing on the SW extremity of the Hornslandet peninsula, 4.5 miles NE of Kraskar Light.

Myran (61°36'N., 17°28'E.), a group of shoals with a least depth of 2.9m, lies about 1 mile SE of Holickskar Light and fronts the S side of the Hornslandet peninsula.

Olofsgrund (61°34'N., 17°28'E.), a detached shoal bank, lies 1.4 miles N of Ago Light. It has a least depth of 5.1m and is marked by buoys.

Hudiksgrund (61°36'N., 17°25'E.), a detached shoal bank, lies about 1.5 miles SSW of Holickskar Light. It has a least depth of 4.6m and is marked by a buoy.

An isolated shoal, with a depth of 9.6m, lies about 1 mile S of Hudiksgrund, 2.8 miles NW of Ago Light, and is marked by a buoy.

Pilotage.—Pilotage within Hudiksvall is compulsory. Pilots must be requested through Galve VTS (see [paragraph 6.7](#)). Pilots may be contacted by VHF and board in the vicinity of Hallgrund Light (61°17'N., 17°24'E.) or, by special arrangement, about 3 miles N of Ago Light.

Directions.—Two main approach routes lead from seaward and are both authorized for drafts up to 9.9m.

Vessels may head WSW and pass between Myran shoal and Olofsgrund shoal or they may head W and pass between the N side of Agon Island and Olofsgrund shoal.

Vessels may then pass S and W or N of the isolated 9.6m shoal lying 1 mile S of Hudiksgrund. Deep-draft vessels are advised to pass S and W of the latter shoal.

Hudiksvall (61°44'N., 17°07'E.)

[World Port Index No. 25780](#)

6.24 The port, which mainly handles timber products, is situated at the head of Hudiksvallsfjarden, about 14 miles NW of the entrance to the inlet.

Ice.—Hudiksvallsfjarden is usually ice-covered from the middle of December to the end of April. The channel is kept open by icebreakers but berthing delays may occur.

Tides—Currents.—The water level within the inlet is lowered by N winds and raised by S winds. Currents in the approaches are negligible.

Depths—Limitations.—The route leading NW from S of Hudiksgrund has a least depth of 11m and is authorized for drafts up to 9.9m (see [paragraph 6.23](#)).

The main channel leading into Hudiksvallsfjarden passes through Saltvikssundet, a narrow passage 1.5 miles long, located 5 miles SE of the port. Kastellholm, a small islet, lies in the approach to the berths and buoyed channels pass each side of it.

Oljekajen, a T-shaped oil jetty, is 69m long and has a depth of 10.9m alongside. Tankers up to 60,000 dwt, 230m in length, 32m beam, and 9.9m draft can be accommodated.

Stenkajen, the main quay, is 400m long and has depths of 4.8 to 7.3m alongside. Kattvikskajen, with a ro-ro ramp at the S end, is 365m long and has depths of 5.3 to 9.3m alongside. Cargo vessels up to 30,000 dwt, 165m length, 32m beam, and 8.6m draft can be accommodated.

Aspect.—The entrance channel is indicated by lighted ranges and marked by buoys and beacons.

Blaxasberget, 460m high, stands 11 miles WSW of Hudiksvall. This hill is precipitous on its E and S sides and is especially conspicuous from SE.

Storberget, a prominent hill, rises 8 miles W of Hudiksvall. An aeronautical light is shown from a mast, with an elevation of 335m, standing on the N side of this hill.

Regulations.—At night, berthing at Oljekajen, the oil jetty, is restricted to tankers of not more than 100m in length.

Speed restrictions apply within the port.

Tugs are compulsory for cargo vessels over 8,000 tons and tankers over 6,000 tons.

Anchorage.—Vessels may anchor, in depths of 8 to 23m, mud and sludge, close SE of Kastellholm islet.

Caution.—A submarine cable and a submarine pipeline, which may best be seen on the local chart, extend across the harbor close W of the oil jetty.

6.25 Iggesund (61°38'N., 17°07'E.) ([World Port Index No. 25760](#)) is situated at the head of a narrow inlet, 5 miles S of Hudiksvall.

Ice.—The channel leading to Iggesund is normally obstructed by ice from January to April.

Depths—Limitations.—The routes leading from seaward into Hudiksvall are authorized for drafts up to 9.9m (see [paragraph 6.23](#)).

The entrance channel leading to the harbor is authorized for drafts up to 8m as far W as Skarnas Terminal, the commercial facility.

Skarnas Terminal consists of a concrete pier and a quay. The pier, at the E side of the terminal, is 152m long and has a berth on each side. The berth on the N side is 150m long and has a depth of 7.9m alongside. The berth on the S side is 140m long and has a depth of 7.9m alongside.

The quay, located W of the pier, is 240m long and has a depth of 7.8m alongside.

Regulations.—Vessels bound to or from Skarnas Terminal should make a general call on VHF channel 16 prior to proceeding through Dukarsund, the narrow entrance channel. Inbound vessels should call when passing Bondgrund shoal (61°37'N., 17°16'E.); and outbound vessels should call before leaving the berth.

Aspect.—The entrance channel is indicated by a lighted range and marked by buoys.

The buildings and chimneys, up to 125m high, of the textile factory at Iggesund are conspicuous.

Anchorage.—Anchorage can be obtained, in depths of 10 to 12m, mud, SW of Skarnas Terminal.

Hudiksvall to Sundsvallsbukten

6.26 The coast between the peninsula of Hornslandet and the S entrance of Sundsvallsbukten, 32 miles N, is mostly high and wooded. The shore is fronted by numerous islands, rocks, and shoals, which may best be seen on the chart. Only the outer dangers are described below. Several small fishing boat harbors are situated along this stretch of the coast.

Balson (61°43'N., 17°32'E.), a wooded island, lies close off the NE side of the peninsula of Hornslandet and is fringed by shoals. Its N and S sides should not be approached within 1 mile and its E side should not be approached within 0.5 mile.

A main light (Balso Light) is shown from a prominent tower, 6m high, standing on a rock lying close off the E side of the island.

Balsosund, a narrow passage encumbered by rocks and shoals, separates Balson from the NE side of Hornslandet. A buoyed channel, which is authorized for drafts up to 3.9m,

leads through this passage and may be used by small vessels with local knowledge.

Kuggorarna, a bare islet, lies at the SW end of Balsosund. A prominent chapel, with a belfry, stands on this islet.

Anchorage may be obtained by small vessels, with local knowledge, in a depth of 13m, sand and stones, between the N end of Kuggorarna and the E side of the mainland peninsula.

Arnoviken (61°43'N., 17°24'E.) lies at the NW side of Hornslandet, 3.5 miles W of Balson. This inlet provides sheltered anchorage and is accessible to vessels of medium draft. Halvarskar, a wooded islet, lies on the W side of the entrance and Hastholmen, another islet, lies close off the N extremity of Hornslandet. The best anchorage is in depths of 20 to 25m, mud and sand, at the head of the inlet. The entrance channel is available to vessels with drafts up to 4.9m. Local knowledge is advised. Ice usually obstructs this inlet from November to May.

Bergo Light (61°49'N., 17°25'E.) is shown occasionally from a structure standing on the mainland, 7 miles NW of Balso Light. Rocks and shoals extend up to about 1 mile seaward from the shore in the vicinity of this light.

Remmarharet (61°51'N., 17°26'E.), an above-water rock, lies on a large shoal bank centered 2 miles NNE of Bergo Light. A prominent beacon, 4m high, stands on this rock.

Britas Klack (61°53'N., 17°28'E.), with a least depth of 2.3m, lies 3 miles offshore, about 5 miles NNE of Bergo Light. This shoal is marked at its S and W sides by buoys.

A detached shoal bank, with above-water rocks, lies centered 1.7 miles NNE of Britas Klack.

Glavsberget, rising 9.5 miles WNW of Bergo Light, is 187m high and consists of several large rocky hummocks, which are clearly visible from SE. From the E, this hill appears more compact.

Bolleberget, rising about 14 miles NW of Bergo Light, is 294m high. This hill can be easily distinguished from the others in the vicinity and is conspicuous from seaward.

Caution.—Eystrasaltbanken (61°46'N., 18°52'E.), a shoal bank with a least depth of 12m, lies about 38 miles E of the NE extremity of the island of Balson.

6.27 Stocka (61°54'N., 17°21'E.) ([World Port Index No. 25800](#)), a former commercial harbor, is situated on the S side of a small inlet, 12 miles NNW of Balso Light.

The inlet is sheltered by several shoals and the islets of Ingaskar and Ronnskar, which lie in the entrance. A breakwater extends NE from the S shore of the inlet toward Ingaskar. There are depths of 5.5 to 6.4m, clay, gravel and stones in the inlet, which narrows toward its head. The entrance channel, which leads close S of Britas Klack shoal, is authorized for drafts up to 5.4m. Ice usually obstructs the harbor from January to March. Local knowledge is required.

A pier, used for laying up, is situated in the SW part of the harbor. The outer part of the N side of the pier provides a berth, 110m long, with a depth of 5.1m alongside. The inner part provides a berth, 50m long, with depths of 1.9 to 3.9m. The S side of the pier provides a berth, 65m long, with a depth of 3.8m alongside.

Anchorage may be taken, in depths of 4 to 6.5m, stone, clay, and sand close W of Ingaskar.

Four prominent wind generators stand near the coast about 1 mile SSE of Stocka.

A conspicuous chimney is situated at Stromsbuck, about 1.5 miles S of Stocka. A tower stands close N of this chimney but is prominent only when viewed from the S and SE.

Jattholmarna (61°57'N., 17°31'E.), lying about 3 miles offshore, consists of two moderately high, wooded islands, which are separated from each other by a narrow channel. This channel may only be seen from N or S. The islands are fringed by rocks and shoals.

Vitorarna, consisting of two islets, lies on a shoal bank 1.2 miles N of Jattholmarna. The N and larger islet is mostly wooded; a beacon stands on the S islet.

Hartefjarden, an inlet, indents the mainland, 2.5 miles W of Vitorarna. Harteskar, a small islet, lies in the middle of the entrance. Anchorage may be obtained, in a depth of 10m, sand, within this inlet but it is open to winds from between E and S. The entrance channel leads SW of Harteskar and is authorized for small vessels with drafts up to 7m. Local knowledge is advised.

Gran (62°01'N., 17°38'E.), a moderately-high wooded island, lies about 5 miles offshore, 4.5 miles NE of Jattholmarna. A small fishing harbor, protected by a breakwater, is situated at the E side of this island.

A main light is shown from a prominent framework tower surmounting a dwelling near the center of the island.

6.28 Lillgrund (62°03'N., 17°40'E.), a shoal bank with rocks awash, lies centered 2 miles NNE of Gran and is marked by buoys.

Norra Myran, a shoal bank with a least depth of 3.2m, lies centered 2.3 miles WNW of Gran and is marked by a buoy.

Hundgrund (62°07'N., 17°48'E.), with a least depth of 6m, lies 7.5 miles NE of Gran. This shoal is the outermost danger in this vicinity and is marked by a buoy.

Orraklinten, 242m high, rises 12.3 miles NW of Gran. This prominent hill is very steep on its N side, but appears to have three summits of equal elevation when viewed from the S.

Bramon (62°13'N., 17°43'E.), 73m high and densely wooded, lies 1.5 miles off the Bjorko peninsula, 12 miles NNE of Gran. A main light is shown from a prominent tower, 16m high, standing on the NE side of this island.

Revhallan, a shoal with a least depth of 0.8m, lies about 0.4 mile NE of the light and is marked by a buoy.

Bramo Kalv, a wooded islet, lies close off the SW end of Bramon. A light is shown from a prominent tower, 9m high, standing on the SW side of this islet.

Bramosund lies between the mainland and the W side of Bramon. This sound is generally clear of dangers but foul ground fringes the mainland shore. The passage is available to vessels with drafts up to 10m. Local knowledge is advised.

Anchorage may be obtained, in depths of 14 to 25m, sand and mud over clay, close off Sanna, a village standing on the W side of Bramon 1.2 miles N of Bramo Kalv Light.

The current sets moderately through the sound and is frequently strong. The most troublesome sea is raised by SW winds.

Lorudden (62°14'N., 17°39'E.), a high point, is situated on the mainland at the NW end of Bramosund and is marked by a light.

Caution.—Several nature reserves, including the waters surrounding the island of Gran and the islets of Vitorarna, are situated along the coast between Hornslandet and the S entrance of Sundsvallsbukten. Entry into these reserves is affected by numerous restrictions.

Submarine cables, which may best be seen on the chart, extend across Bramosund, about 1.3 miles S of Lorudden Light.

Sundsvallsbukten

6.29 Sundsvallsbiken (62°20'N., 17°35'E.), a large bay, is entered between the island of Bramon and the island of Aston, 9.5 miles N. Sundsvall, with its associated harbors, is the principal port lying within this bay. A number of former timber-loading berths are situated throughout the bay but most of these are no longer open to commercial shipping.

Astholmsudde (62°23'N., 17°44'E.) is the SE point of Aston and the highest part of the island. A main light is shown from a structure standing on this point. A beacon, 5m high, is situated close N of the light.

The bay is encumbered by many islands, rocks, and shoals, which may best be seen on the chart. Only the outermost dangers are described below.

Kattgrundet (62°16'N., 17°45'E.), with a least depth of 9.9m, lies about 3.2 miles N of Bramon Light. This shoal is the outermost danger on the S side of the approach.

Sjogrund, a shoal patch with a least depth of 8.5, lies about 3.8 miles NW of Lorudden Light. Storgunden, a shoal bank with a rock awash, lies centered about 1 mile WNW of Sjogrund. Knuten, a shoal with a least depth of 2.8m, lies near the NW side of Storgunden, about 1.4 miles NW of Sjogrund. These three shoals form the outermost dangers on the S side of the entrance.

Alnon (62°23'N., 17°28'E.), a large island, encumbers the inner part of the bay and rises to a height of 120m in its SW part.

Gubben Light (62°21'N., 17°35'E.) is shown from a prominent floodlit tower, 10m high, standing on an islet lying 1.5 miles ESE of the SE extremity of Alnon.

Draget, lying 1.3 miles SSW of Gubben light, is the southernmost islet of a chain of islands and islets extending up to 1.8 miles S from the SE extremity of Alnon.

A shoal, with a depth of 6.3m, lies about 0.3 mile SSW of Draget. Vastra Asen, a detached shoal with a depth of 2.7m lies about 0.3 mile WSW of Draget and is marked by buoy. These two shoals form the outermost dangers in this vicinity.

Rodon, 92m high and hilly, is located 2.5 miles N of Gubben Light and is the largest of several islands lying close off the E side of Alnon. Its shoreline is reddish in color.

Rodogubben Light (62°23'N., 17°36'E.) is shown from a prominent tower, 12m high, standing on a small islet lying close off the SE side of Rodon.

Granon, an island marked by a light on its NW side, lies 3.5 miles NNW of Rodogubben Light.

6.30 Draghallan Light (62°20'N., 17°26'E.) is shown from a prominent tower, 14m high, standing on a rocky shoal lying about 0.8 mile S of the SW extremity of Alnon. The N side of this rocky shoal is marked by a lighted buoy.

A shoal, with a least depth of 2.7m, lies close SE of the light and is marked by a buoy. A detached shoal patch, with a depth of 8.2m, lies 0.4 mile N of the light and is marked by a lighted buoy.

Alnosundet (62°26'N., 17°24'E.) is the passage lying between the mainland and the W side of Alnon island. Alnobron, a bridge, spans this passage about 5.7 miles NNW of Draghallan Light and is marked by a racon.

The navigable channel leading under the bridge is 70m wide and has a vertical clearance of 39m.

Klingerfjarden (62°29'N., 17°28'E.) is an inlet lying between the N end of Alnon and the head of the bay.

Directions.—Two approach routes, which may best be seen on the chart, lead into the bay and converge in the vicinity of Draghallan Light.

The main route, which is authorized for drafts up to 13m, leads W for about 2 miles from a position located 0.6 mile SE of Astholmsudde Light. It continues WSW for about 5 miles and passes midway between Rodogubben Light and Gubben Light and close SSE of the SE extremity of Alnon island. This main route then leads SW and rounds Draghallan Light on the S side.

Vessels, with drafts up to 8m, may use the channel leading between the N side of Draghallan Light and the detached 8.2m shoal patch lying 0.4 mile N.

The secondary approach route, which is authorized for drafts up to 10m, leads NW for about 5 miles from a position located 1.2 miles E of Bramon Light (62°13'N., 17°43'E.). It passes between the N side of Bramon island and Kattgrundet shoal. The route then continues WNW for about 7 miles and rounds Draghallan Light, on the S side. It passes about 0.9 mile NNE of Knuten shoal and 0.6 mile SSW of Vastra Asen shoal.

The alternate route through Bramosund, which is authorized for drafts up to 10m, joins this secondary route at a position located about 4.5 miles SE of Gubben Light (see paragraph 6.29).

Caution.—Floating logs may be encountered in the approaches to Sundsvallsbiken.

A military exercise area lies in the approaches to Sundsvallsbukten. It is situated between Bramon (62°13'N., 17°43'E.) and Skarpudden (62°29'N., 17°49'E.) and extends up to 10 miles seaward.

Several submarine cables, which may best be seen on the chart, extend across the routes within Sundsvallsbiken.

Two mined areas, the limits of which are shown on the chart, lie within Sundsvallsbiken in the vicinity of Draghallan Light and W of Granon. Normal surface navigation is permitted but fishing or anchoring in these areas is prohibited. During thunderstorms, passage through these areas may be dangerous.

Sundsvall (62°23'N., 17°21'E.)

[World Port Index No. 25910](#)

6.31 Sundsvall is situated at the head of Sundsvallsfjarden, an inlet located at the W side of Sundsvallsbukten. The port also includes the facilities at Vindskarvarv, Ortviken, Kubikenborg, Skonsberg, and Cementsilokajen, which are situated within Sundsvallsfjarden; and the harbors of

Tunadalshamnen, Johannedal, and Ostrand, which are situated in Alnosundet.

The port exports various wood products and aluminum, and imports bauxite, oil, and fertilizers.

Ice.—The port is usually operated all year round. However, ships may be delayed by ice from December to April.

Tides—Currents.—The greatest extremes of water level observed in Sundsvallsbukten are about 0.8m above and 1.1m below mean sea level. Higher water levels occur with E and SE winds, and low water levels with N and prolonged NNE winds. The timing of high or low water is unpredictable and depends entirely on the wind direction and velocity.

Aspect.—The approach routes and entrance channels are indicated by directional sector lights and lighted ranges. The fairways are marked by buoys.

Tjuvholmen, an islet 35m high, lies in the entrance to Sundsvallsfjorden and is marked by a light on its W side.

Five prominent chimneys, at an aluminum works, and a conspicuous silo stand on the S side of Sundsvallsfjorden, about 0.4 mile SSW of Tjuvholmen Light.

A conspicuous radio mast stands on a hill about 3 miles SSW of Draghallan Light.

An aeronautical light is shown from a conspicuous framework tower standing on the N slope of Sodra Stadsberget, 3.8 miles WNW of Draghallan Light.

A conspicuous floodlit pilot lookout tower stands on Skorven, an islet lying close off the SE extremity of Alnon.

A conspicuous church, with a square tower and a spire, stands in the S part of Njurunda, 5.3 miles SSW of Draghallan Light.

Depths—Limitations.—From close W of Draghallan Light, the main route, which is authorized for drafts up to 13m, leads 2.5 miles NW to the entrance of Sundsvallsfjorden. The channel passing N of Tjuvholmen is authorized for drafts up to 12m and the channel passing S of this islet is authorized for drafts up to 11.3m. The channel leading to the inner part of Sundsvallsfjorden is authorized for drafts up to 7.8m.

The channel leading into Alnosundet from the vicinity of Tjuvholmen is authorized for drafts up to 12m as far as Tunadalshamnen, 1 mile S of the bridge. The channel continuing to the anchorage off Ostrand, at the NW end of Alnosundet, is authorized for drafts up to 9m. The channel leading from Ostrand anchorage to the berths is authorized for drafts up to 7m.

Vindskarvarv, an oil terminal, is situated on the SE side of the inlet. It has a berth, 100m long, with a depth of 12m alongside.

Ortviken, a harbor situated on the NE side of the inlet, has three quays. They are 157m, 90m, and 160m long with depth of 6.9m, 6.5m, and 11.3m alongside, respectively.

Kubikenborg, a harbor situated on the SE side of the inlet, has a quay, 153m long, with a depth of 10.1m alongside. At a distance of 3m off the quay the depth is 11m.

Skonsberg, a harbor on the N side of the inlet, has a quay, 50m long, with a depth of 6.7m alongside.

Cementsilokajen, a harbor on the S side of the inlet, has a quay, 15m long with two breasting dolphins, with a depth of 6.9m alongside.

Sundvall harbor, also known as Stadshamnen, has 740m of main quayage, with depths of 5.3 to 8.1m alongside. There is also a reserve berth, 325m long, with a depth of 3.9m alongside.

A new ferry berth, 130m long with a ro-ro ramp, has been constructed at the Town Quay. It has a depth of 8.1m alongside and can handle vessels with drafts up to 7.8m.

Tunadalshamnen harbor is situated at the SW side of Alnosundet and provides three quays. Timber Quay is 195m long and has depths of 4.5 to 7.3m alongside; Sundsvall Terminal Quay is 660m long and has depths of 9.1 to 12.3m alongside; and Gas Oil Quay is 62m long and has a depth of 11.1m alongside.

Johannedal harbor is situated on the W side of Alnosundet, close N of the bridge. It has a timber quay, 120m long, with depths of 2.5 to 5.5m alongside.

Ostrand harbor, at the NW end of Alnosundet, has a quay, 52m long, with a depth of 5.8m alongside. Vessels up to 130m in length can also berth alongside a lighter.

The port has facilities for tanker, ro-ro, container, timber, bulk, general cargo, LPG, cruise, and ferry vessels. Tankers up to 60,000 dwt, 250m in length, and 11.4m draft can be handled. LPG vessels up to 200m in length and 10.4m draft can be handled.

Pilotage.—The pilotage area for Sundsvall lies between latitude 62° 08'N and latitude 62° 5 0'N (including Gaviksfjorden and Angermanalven). All requests for pilotage must be made through the VTS station at Gavle (see [paragraph 6.7](#)).

Pilotage is compulsory, as follows:

1. All Category 1 vessels.
2. Category 2 vessels of 90m in length or 16m beam and over.
3. Category 3 vessels of 100m in length or 17m beam and over.

In certain channels within Angermanalven, pilotage is compulsory, as follows:

1. All Category 1 vessels.
2. Category 2 vessels of 80m in length, 15m beam, and 5m draft and over.
3. Category 3 vessels of 90m in length, 16m beam, and 5.5m draft and over.

Pilots can be contacted by VHF and board in Sundsvallsbukten, about 2.5 miles E of Gubben Light.

Anchorage.—Anchorage may be obtained, in depths of 29 to 32m, mud, E of Tjuvholmen islet or, in depths of 10 to 20m, clay and mud, within Sundsvallsfjorden.

Anchorage may be obtained by vessels with drafts up to 9m close off the quays at Ostrand.

Caution.—Submarine pipelines, which may best be seen on the chart, extend 0.8 mile ENE from a point located on the N side of Sundsvallsfjorden, 0.5 mile NNW of Tjuvholmen Light; and extend 1.2 miles ENE from the vicinity of Ostrand.

Several submarine cables and a pipeline, which may best be seen on the chart, extend across Alnosundet.

6.32 Stockvik (62°20'N., 17°23'E.) ([World Port Index No. 25900](#)) is situated on the NW side of Ljungan Inlet, about 2 miles W of Draghallan Light. Limestone, coke, methanol, and

oil are imported here; and ammonium nitrate and carbide are exported.

The channel leading to the anchorage from the vicinity of Draghallan Light is authorized for drafts up to 13m. The channel leading to the berth is authorized for drafts up to 6.3m.

The harbor is protected by a detached breakwater, 200m long. Stora Kajen, the N and main berth, is 195m long and has depths of 6 to 6.5m alongside. A T-headed jetty, 20m long, is situated close S of the main berth and has a depth of 4.6m alongside. Vessels up to 190m in length and 6.3m draft can be handled at the port. Silting occasionally occurs at the N end of Stora Kajen.

Vessels can anchor, in a depth of 29m, clay, close off the harbor.

6.33 Klingerfjarden (62°29'N., 17°28'E.), lying between the N end of Alnon and the head of Sundsvallsbukten, can be entered from seaward and via the N end of Alnosundet. Both routes are authorized for drafts up to 9m.

The ports of Vivstavarv and Soraker are situated in Klingerfjarden along with several small craft harbors.

The main route from seaward leads between the E side of Alnon and the mainland to the NE. An alternative channel, which joins the main route, passes between the E side of Alnon and the W side Rodon islet.

Regulations.—Designated safety areas, which lie S of the airport, have been established in the NE part of Klingerfjarden. Vessels, with an air draft (height) over 20m, must contact VTS Gavle on VHF channel 13 or by telephone at least 2 hours prior to entering these areas.

Vivstavarv (62°29'N., 17°22'E.) ([World Port Index No. 26140](#)) lies on the NW side of Klingerfjarden. Liquid resin and paper products are exported; and fuel oil and caustic soda are imported.

The channel leading to the anchorage is authorized for drafts up to 9m and the channel leading to the berths is authorized for drafts up to 7.3m.

Papperskajen, the paper quay, is 145m long and has depths of 7.8 to 10.6m alongside. Pulp Quay is 90m long and has depths of 4.7 to 6m alongside. Vessels up to 130m in length can be handled with the maximum draft depending on their length. Vessels with drafts up to 9m can anchor off the harbor and secure to stern moorings.

Soraker (62°30'N., 17°30'E.) ([World Port Index No. 26180](#)) lies on the E side of Klingerfjarden. Salt, fertilizer, steel, and limestone are imported; and machine goods are exported.

The approach channel is authorized for drafts up to 5.8m. The harbor consists of a dredged basin, 190m long and 30m wide. The quay, situated in the inner part of the basin, is 180m long and has a depth of 6.1m alongside.

Vessels up to 90m in length and 5.8m draft can be accommodated. Vessels with drafts of 4m and over must be assisted by a tug.

Sundsvallsbukten to Harnosand

6.34 Skarpudden (62°29'N., 17°49'E.), marked by a light, is located 6 miles NE of Astholmsudde Light.

Nygrund, a detached shoal with a depth of 4.8m, lies about 0.8 mile SW of Skarpudden and is marked by a buoy;

Isaksgrundet, a rock awash, lies about 0.5 mile ESE of Skarpudden and is marked by a buoy; and Glogrund, a detached shoal with a depth of 10m, lies about 0.5 mile offshore, 1.5 miles NE of Skarpudden.

Avikebukten (62°28'N., 17°44'E.), a large bay, is entered S of Skarpudden. Fjardgrunden, a shoal with a least depth of 3.8m, lies in the S part of this bay, about 3 miles SW of Skarpudden Light.

Anchorage can be obtained, by vessels with local knowledge, in various locations within Avikebukten, in depths of 5 to 25m, sand.

Byviken (62°33'N., 17°53'E.), entered about 4 miles NNE of Skarpudden Light, is clear of dangers to within 0.4 mile of its head. This inlet affords anchorage to vessels, with local knowledge, in depths of 10 to 13m, sand and stone, but it is exposed to winds from the SE. Norra Baden and Sodra Baden are two islets lying close off the N entrance point.

An aeronautical light is shown, at an elevation of 270m, from a prominent framework mast standing at Ljustorp, 15 miles WNW of Skarpudden Light.

Caution.—**Vanta Litets Grund** (62°30'N., 18°16'E.), lying 12.5 miles E of Skarpudden Light, consists of two steep-to shoals, which are composed of stones and pointed rocks. The northeasternmost shoal has a least depth of 6.3m and the southwesternmost shoal has a least depth of 4.1m. A light is shown from a prominent tower, 20m high, standing on the NE shoal and a buoy marks the SW shoal.

The depths in the vicinity of Vanta Litets Grund are very irregular and the area should be given a wide berth.

Approaches to Harnosand and Angermanalven

6.35 The approaches to Harnosand and Angermanalven lie between the N entrance point of Byviken and Karingbergsudden Light (62°47.5'N., 18°11.2'E.), about 18 miles NE. The mainland coast in this vicinity is fronted by several large islands and islets. A number of entrance channels lead between the islands. Several small craft harbors lie along the sides of these passages.

Harnon (62°36'N., 17°59'E.), an island lying with its S extremity located about 5.7 miles NE of Skarpudden Light, is moderately high, with wooded ridges separated by deep valleys. The sides of the hills near the sea are gray, bare, and intersected by ravines. From seaward, this island appears to be the same height as the mainland behind it.

Storholmen Light is shown from a structure standing at the SW end of the island. Harno Vardkasberget, a gray hill, rises about 3.5 miles NNE of the light and is conspicuous from seaward. It is 175m high and surmounted by a small lookout tower. A prominent radio mast stands 0.3 mile ESE of this hill.

Harnoklubb Light (62°36'N., 18°04'E.) is shown from a tower, 6m high, standing on a point located on the E side of the island, 4.5 miles NE of Storholmen Light. A barron hill, 82m high, rises close WSW of the light and is surmounted by a beacon, 11m high. Close SE of and below the beacon is a large, white mark, which is conspicuous from seaward.

Harno Sodra Light is shown from a tower, 6m high, standing 0.6 mile NNE of Harnoklubb Light. A conspicuous white building, a former pilot station, is situated on the coast, 0.5 mile NNW of this light.

Lungon (62°39'N., 18°04'E.), lying 1 mile N of Harnon, is a wooded island, which rises to a height of 50m in its N part. A light is shown from a prominent tower, 15m high, standing on the SE extremity of the island.

Anchorage can be taken, in depths of 8 to 15m, within Sundhamn, a narrow inlet indenting the NE side of the island. Local knowledge is required.

Stromskaten Light (62°40'N., 18°00'E.) is shown from a floodlit structure standing on the SW extremity of the island.

BogrunDET, a shoal bank with rocks awash, lies about 0.3 mile off the S side of the island, 1.3 miles ESE of Stromskaten Light. Hakansgrund, a shoal with a least depth of 2m, lies about 0.3 mile off the S side of the island, 0.7 mile W of the SE extremity. Both of these dangers are marked by buoys.

6.36 Hemson (62°43'N., 18°05'E.), lying close N of Lungon, is high and hilly. The shores of this island are reddish in color in several places. Hemsöhatt, a prominent hill, rises on the SE part of the island. It is 208m high and resembles a hat with a wide brim. Another prominent hill, 223m high, stands about 2 miles NNW Hemsöhatt.

Utanofjarden, an inlet, indents the middle of the E side of Hemson and provides anchorage to vessels with local knowledge. Storgrundet, a shoal with a least depth of 4.5m, lies in the center of the entrance. The entrance channel, which is authorized for drafts up to 6m, leads W and passes N of this shoal. Juviken, a small bay lying on the S side of the inlet, has depths of 15 to 25m, clay. Prasthushamn, a small bay lying on the N side of the inlet, has depths of 12 to 20m, clay and sand.

Two prominent radio masts stand on the shore of Prasthushamn.

Nordanoviken, a bay indenting the middle of the N side of Hemson, provides well-sheltered anchorage, in depths of 18 to 22m, clay, within its S part. Local knowledge is required. The N part of the bay is unsuitable because the depths are considerable.

Storon (62°46'N., 18°13'E.), a wooded island, lies 2 miles NE of the NE end of Hemson. It is fairly high and attains an elevation of 56m in the N part.

Karingsbergsudden Light is shown from a point on the mainland located 1.6 miles WNW of the NE extremity of Storon. Gronviksfjarden, a bay used only by small craft and pleasure boats, is entered close W of this light.

Caution.—A submarine cable, which may best be seen on the chart, extends across the W side of Utanofjarden.

A spoil ground area, which may best be seen on the chart, lies centered 2.5 miles ENE of Harnoklubb Light.

The approaches to Harnosand and Angermanalven lie within the Hemson Semi-restricted Area, which includes the waters between the islands of Storon, Hemson, Lungon, and Harnon. The limits of this area may best be seen on the chart. Vessels proceeding through the area must keep to the designated pilotage routes.

For further information on restricted and semi-restricted areas, see Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean, Baltic Sea, North Sea, and the Mediterranean Sea.

6.37 Sodrasundet (62°36'N., 17°56'E.), forming the S approach to Harnosand, leads in a N direction between the W

side of Harnon and the mainland. An overhead cable, with a vertical clearance of 20m, spans this passage about 3 miles N of the seaward entrance.

An inlet, lying at the SE end of the passage, leads to Solumshamn, which is situated on the SW part of Harnon. This inlet provides good anchorage to vessels with local knowledge, in depths of 10 to 33m, clay and sand. Vessels should not proceed too far inside a line joining the entrance points because two shoals, with least depths of 7.4m and 3.6m, lie about 0.2 mile and 0.3 mile, respectively, SSE of the N entrance point.

Anchorage can also be taken, in depths of 10 to 12m, clay and mid, within Norra Falloviken, a narrow inlet indenting the mainland, about 4.7 miles N of the seaward entrance. Local knowledge is required.

Stora Inlopp (62°39'N., 18°00'E.), the principal N approach route to Harnosand, lies between Harnon and Lungon. This channel also provides access to Angermanalven by way of Sannasundet. The fairway has depths of 46 to 82m and is clear of dangers, except on its NE side.

Alandsfjarden (62°40'N., 17°56'E.), leading in a WNW direction, is a continuation of Stora Inlopp. This inlet may be entered via a channel, which is authorized for drafts up to 10m. Local knowledge is advised.

6.38 Ulvvik (62°40'N., 17°52'E.) ([World Port Index No. 26280](#)), a small harbor, is situated on the N side of Alandsfjarden, about 2.2 miles NW of the NW end of Harnon. The main quay is 80m long and has depths of 6.5 to 10m alongside.

Good anchorage can be obtained in the inner part of Alandsfjarden, in depths of 10 to 20m, mud.

Anchorage can be also taken, in depths of 12 to 14m, off Alandsbro, a village situated at the head of the inlet, and off Nasslandssund, a village standing close N of Alandsbro. Vessels at these anchorages may secure their sterns to dolphins.

Lungosundet (62°40'N., 18°03'E.) leads between Lungon and Hemson. Vessels from the N, with local knowledge, sometimes use this passage when bound for Harnosand or Alandsfjarden. The channel is authorized for drafts up to 9.9m.

Bonskaret is a low, gray, and barren islet lying on the N side of the entrance, close off the SE side of Hemson.

Sannasundet (62°42'N., 18°00'E.), lying between the W side of Hemson and the mainland, leads N from the W end of Lungosundet to Angermanalven. From the N end of this passage, a channel leads between the SW side of Abordson, an island lying NW of Hemson, and the mainland.

Angermanalven, with its tributaries, forms one of the largest river systems in Sweden. In addition to the route via Stora Inlopp and Sannasundet, it can also be entered through channels leading N or S of Storon and N or S of a group of islets lying N of the NE end of Hemson.

The routes leading through Sannasundet and N or S of Storon are authorized for drafts up to 10m.

Caution.—A submarine cable extends across Alandsfjarden, about 0.7 mile NW of the NW end of Harnon.

Defensive minefields, the limits of which may best be seen on the chart, extend across Lungosundet, Stora Inlopp, Sannasundet, and the channel lying N of Hemson. Surface navigation is permitted, but anchoring and fishing within these

areas are prohibited. Vessels transiting through the areas during a thunder storm do so at their own risk.

Harnosand (62°38'N., 17°56'E.)

World Port Index No. 26240

6.39 Harnosand (Hernosand) stands on the NW side of Harnon. The port facilities are situated along both sides of the narrow channel separating the NW side of the island from the mainland. Forest products and iron oxide are exported; and oil, asphalt, sulfuric acid, and general cargo are imported.

Winds—Weather.—The harbor is considered to be one of the best in the N part of Sweden, being easy of access, spacious, and well-protected from all winds.

Ice.—Ice obstruction normally occurs from January until early or mid-April. However, the port is usually kept open by icebreakers.

Tides—Currents.—Higher water levels normally occur in the fall with S and SE winds; lower water levels occur in the spring with N and NW winds. On the average, the annual maximum and minimum water levels differ by about 0.8m from the mean water level. The current in the harbor is not very troublesome.

Depths—Limitations.—The N and S harbors of the port are connected by two canals, which can be used by small craft. Vessels bound for the S harbor must enter through Sodrasundet. The main commercial facilities are situated in the N harbor. Vessels bound for the N harbor must enter through Stora Inlopp.

The approach channel, via Stora Inlopp, is authorized for drafts up to 10.5m.

Oljekajen, an oil terminal, has a quay, 62m long, with a depth of 11.2m alongside.

Djuphamnskajen, a concrete quay with a ro-ro ramp at the N end, is 260m long and has depths of 7.5 to 8m alongside.

Norra Skeppsbron Quay is 190m long and has depths of 4.3 to 4.6m alongside.

Utspranskajen, an iron piled quay, is 169m long and has depths of 6.3 to 8.1m alongside.

Sodra Skeppsbron, a concrete quay, is 310m long and has depths of 4.9 to 5.7m alongside.

There are also several small craft quays, with depths of 2 to 5m alongside.

Tankers up to 200m in length and 10.5m draft can be accommodated in the port.

Aspect.—Harnosands Hamn Light is shown from a prominent tower, 6m high, standing on the NE end of Harnon.

Pilotage.—Pilotage is compulsory. Pilots are provided by the Sundsvall pilot station (see [paragraph 6.31](#)). All requests for pilotage must be made through the VTS station at Gavle (see [paragraph 6.7](#)). Pilots can be contacted by VHF and board in Sundsvallsbukten, about 2.5 miles E of Gubben Light (62°21'N., 17°35'E.).

It is reported (2000) that pilots can also be obtained from the Ornskoldsvik pilot station (see [paragraph 6.48](#)). Requests for pilotage must be made through the VTS station at Lulea. Pilots can be contacted by VHF and board about 2 miles S of the outermost shoal near Skagsudde (63°11'N., 19°01'E.).

Regulations.—Vessels must not exceed a speed of 5 knots in the harbor area.

Anchorage.—The roadstead lying close N of the N harbor provides anchorage, in depths of 14 to 45m, clay.

Caution.—Two submarine cables extend across the N harbor and may best be seen on the chart.

Angermanalven

6.40 Angermanalven (62°48'N., 17°58'E.), lying N of Harnosand, enters the sea on either side of Hemson and Lungon. This river is navigable by large vessels as far as Nyland, about 20 miles above its mouth.

The principal inlets branching from Angermanalven are Norafjarden (62°50'N., 18°02'E.), Lugnviksfjarden (62°55'N., 17°55'E.), and Strinnefjarden (62°58'N., 17°53'E.), on the E side; and Bollstafjarden (62°59'N., 17°44'E.), on the W side.

Norafjarden, the entrance of which is spanned by a bridge with a vertical clearance of 18m, and Strinnefjarden are used only by small craft.

Numerous small harbors are situated along the river, where both anchorage and berthing are available. However, many of these loading places are no longer open to commercial shipping.

Tides—Currents.—The water level varies between 0.5 and 0.7m above or below mean level. Higher water levels occur in autumn, during freshets, and with S, SE, and E winds. Lower water levels occur in early summer, and with N, NW, and W winds.

Ice.—Ice obstruction usually occurs from mid-January to early or mid-April.

Depths—Limitations.—The river can be entered from S through Stora Inlopp and Lungosundet, both of which lead into Sannasundet and the channel lying between the SW side of Abordson and the mainland. The river can also be entered from the N through the channels leading N and S of Storon. All these channels leading from seaward converge close off the NW extremity of Abordson in the vicinity of Veda (62°47.6'N., 17°56.2'E.). From Veda, the route leads in a N direction for 5 miles to the vicinity of Sando (62°53'N., 17°54'E.).

The routes through Sannasundet and those leading N and S of Storon are authorized for drafts up to 10m as far as Sando.

Hogakustenbron, a suspension bridge, spans the fairway channel in the vicinity of Veda and has a vertical clearance of 40m.

The main channel (Svanosund) leads W of the island of Sando and W of the island of Svanon, lying close N. An alternate channel leads E of the islands. These two channels rejoin close N of Svanon and continue N and NW for about 6 miles.

Sandobron, a high level bridge, spans the main channel between the mainland and the W side of Sando. It has a vertical clearance of 40m over a navigable width of 50m.

An overhead power cable, with a vertical clearance of 40m, extends across the main channel at the N end of Svanon.

A bridge spans the alternate channel between the mainland and the E side of Sando. It has a vertical clearance of 12m over a navigable width of 62m.

The main channel leading W of Sando and Svanon is authorized for drafts up to 8.5m as far as Vaja, which is situated

close N of Dynas (62°58'N., 17°46'E.). The alternate channel, passing E of the islands, is authorized for drafts up to 5m.

From the vicinity of Vaja, the main channel leading into Bollstafjarden (62°59'N., 17°43'E.) is authorized for drafts up to 7.7m.

Aspect.—Racons are situated at Hogakustenbron Bridge and Sandobron Bridge.

Pilotage.—Pilotage is compulsory. Pilots are provided by the Sundsvall pilot station (see [paragraph 6.31](#)). All requests for pilotage must be made through the VTS station at Gavle (see [paragraph 6.7](#)). Pilots can be contacted by VHF and board in Sundsvallsbukten, about 2.5 miles E of Gubben Light (62°21'N., 17°35'E.).

It is reported (2000) that pilots can also be obtained from the Ornskoldsvik pilot station (see [paragraph 6.48](#)). Requests for pilotage must be made through the VTS station at Lulea. Pilots can be contacted by VHF and board about 2 miles S of the outermost shoal near Skagsudde (63°11'N., 19°01'E.).

Regulations.—Tankers with drafts over 7m are required to transit Svanosund, the main channel passing W of Sando, during daylight and accept the assistance of a tug.

Vessels must not exceed a speed of 7 knots when proceeding between the S end of Sando and Svanon; when proceeding through the narrow passage between the mainland and the NW end of the island of Abordson; and when in the vicinity of the ferry, which crosses Sannasundet, about 2 miles N of Stromskaten Light (62°40'N., 18°00'E.).

During the period when Angermanalven can be crossed on the ice between Frano (62°55'N., 17°51'E.) and Kinnmargen, about 1 mile N of Svanon, vessels must adhere to the same ice lead, which must not be made wider than 24m. On each side of the ice lead in the vicinity of the crossing is a red post, surmounted by a triangle, 2m high. Traffic signals are displayed from a flagstaff standing at the W side of the ice lead. By day a black ball, or at night a red light, indicates that the lead is closed. A red light over a white light indicates that the lead is open for traffic. A vessel about to pass the crossing must reduce to the slowest possible speed in good time and sound three blasts (short-long-short).

Similar regulations are enforced for the ice lead situated in the vicinity of Utansjo (62°46'N., 17°56'E.). By day brooms, sufficiently tall to avoid being snowed under, and at night white illuminated boards are set up on each side of the ice lead near the crossing. In addition, a red light is exhibited, at an elevation of 2m, on either side of the crossing. Vessels must reduce speed to 5 knots while passing through this lead.

When the ice in the alternate channel leading E of Sando is available for crossing, the passage is closed to marine traffic.

6.41 Utansjo (62°46'N., 17°56'E.) ([World Port Index No. 26290](#)) is situated on the mainland W of the island of Abordson. The entrance channel leading to the harbor is authorized for drafts up to 8.2m. This small port imports oil and exports timber products.

The pulp factory quay is 120m long and has a depth of 9m alongside. A concrete quay is situated close S of the pulp quay. It is 113m long and has a depth of 8.5m alongside. A small basin lying between these two quays provides a quay, 50m long, with depths of 4 to 6m alongside.

Gustavsvik (62°50'N., 17°53'E.) ([World Port Index No. 26310](#)) is situated on the W side of the river, 2.5 miles above the Hogakustenbron suspension bridge. This small harbor provides a drydock, with a depth of 8m over the sill. Vessels up to 18,000 dwt, 165m in length, and 21m beam can be handled.

A concrete quay, 100m long, is situated at the E side of the drydock and has depths of 4 to 8m alongside. Another quay, 40m long, is situated at the W side of the drydock and has a depth of 4m alongside.

Lunde (62°53'N., 17°53'E.) ([World Port Index No. 26340](#)), the site of a former shipyard, is a small harbor located on the W side of the river, close S of Sando. There is a quay, 90m long, with a depth of 4.8m alongside.

Lugnvik (62°56'N., 17°55'E.) ([World Port Index No. 26500](#)), a small harbor, is situated on the E side of Lagnviksfjarden and exports timber products. The entrance channel leading to the harbor is authorized for drafts up to 8.5m. Vessels should pass E of a shoal, with a least depth of 7.9m and marked by a buoy, which lies in the center of the entrance to the fjord.

The main quay is 42m long and has a depth of 8.8m alongside. Vessels up to 114m in length can be handled, with the assistance of a tug. There is also a wooden quay, 120m long, with a depth of 4.5m alongside. However, this quay is reported to be in poor condition and no longer used.

6.42 Kramfors (62°56'N., 17°48'E.) ([World Port Index No. 26380](#)), a small harbor, is situated about 4.5 miles NW of the island of Sando and exports timber products. The entrance channel leading to the berth is authorized for drafts up to 6.3m. The concrete quay is 150m long and has depths of 6.4 to 8m alongside.

Vaja (62°59'N., 17°43'E.) ([World Port Index No. 26420](#)), a small harbor, is situated on the SW side of Bollstafjarden, close N of Dynas. Fuel oil is imported and timber products are exported. Several prominent buildings, chimneys, and tanks stand in the vicinity of the berths.

The entrance channel leading to the berths is authorized for drafts up to 8.5m. The pulp and paper factory quay is 170m long and has depths of 8 to 9.2m alongside. There are facilities for discharging oil at the N end of this quay. The ro-ro quay is 120m long and has a depth of 8m alongside. A quay, fronting the former sawmill, is 136m long and has depths of 4.3 to 5.9m alongside.

Bollsta (62°59'N., 17°42'E.) ([World Port Index No. 26430](#)), a small harbor, is situated near the head of Bollstafjarden and exports timber products. The entrance channel leading to the berth is authorized for drafts up to 7.7m. The loading quay is 135m long and has depths of 6 to 8m alongside.

Caution.—Several unsurveyed areas extend up to about 200m from the shore between Kramfors and Dynas (62°58'N., 17°46'E.). These areas, which should be avoided, may contain the remains of mooring dolphins and ruined quays.

Angermanalven to Ornskoldsviksfjarden

6.43 Gaviksfjarden (62°52'N., 18°16'E.), a large indented bay, is entered about 3.5 miles NNE of Storön. Its shores are mostly steep-to. Ringkallen, a hill, rises on the E side of this bay. It is 280m high, reddish in color, precipitous on the S side, and has a wooded summit. A prominent radio mast stands

about 0.5 mile SSW of this hill. The bay is used only by small craft, pleasure boats, and fishing vessels, with local knowledge.

Barstahamn (62°52'N., 18°24'E.) ([World Port Index No. 26670](#)), a small harbor of refuge, lies about 7 miles NE of Storön and is fronted by five islets. Barstaön, the largest of these islets, is 85m high, wooded at the summit, and appears reddish from the S. Three approach channels lead between the islets to the harbor. The S and E approach channels are authorized for drafts up to 5m; and the N channel is authorized for drafts up to 3m. Local knowledge is advised.

Algrund, a rock awash, lies in the center of the S approach channel and is marked by a buoy. Vessels should pass W of this rock. The harbor affords anchorage, in depths of 11 to 18m, clay and sand, about 0.2 mile E of the village. There is a small jetty with a depth of 3m alongside. The harbor is usually clear of ice, but during a hard winter it may be icebound during February and March.

Hogbonden Light (62°52'N., 18°29'E.) is shown from a prominent tower, 14m high, standing on the NE part of an island of the same name lying 0.8 mile offshore. A conspicuous red dwelling is situated near the light tower.

The island is dome-shaped and partly wooded. It has steep sides and may be easily identified from N or S. Dangers, including a group of above-water rocks, extend up to about 0.5 mile SSW, S, and SSE of the S end of the island.

Hoglosmen, a partly wooded island, lies close N of Hogbonden but is lower than the latter. From SW, a conspicuous mountain knob is visible rising from about the middle of the island.

Furan, an islet, lies close W of the N end of Hoglosmen and is fronted on its E and S sides by foul ground.

Algsjö Light is shown from a structure standing on the mainland 1.5 miles NNW of Hogbonden Light.

6.44 Edsatterfjärden (62°54'N., 18°27'E.), entered close N of Algsjö Light, is a narrow inlet, which affords anchorage within the bays on the N side of its outer part, in depths of 20 to 29m, clay and sand. The inner part of the inlet provides anchorage to vessels, with local knowledge, in depths of 11 to 26m, but a bar, with a least depth of 4.5m, has to be crossed. The shores on both sides of this inlet are steep-to, but a detached shoal, with a depth of 9.5m, lies in mid-channel about 1 mile inside the entrance.

Algsjöberget, a conspicuous hill, stands on the S side of Edsatterfjärden, 1.1 miles WNW of Algsjö Light. It is 196m high and flat-topped.

Omnefjärden (62°57'N., 18°28'E.), entered 3.5 miles NNE of Edsatterfjärden, provides several good anchorages, which can be used by vessels with drafts up to 10m.

Skotbadan, a shoal bank with a least depth of 7m, lies centered about 3.2 miles NNE of Hogbonden Light, in the S approach to this inlet. Laskaren, consisting of two islets located on a shoal bank, lies in the entrance, about 0.8 mile NE of the S entrance point. Orana, a group of islets connected by foul ground and shoals, lies within 1 mile of the head of the inlet.

Small vessels, with local knowledge, may obtain anchorage, in depths of 10 to 11m, clay, off the village of Omne, near the head of the inlet that trends S from the head. Anchorage is also available, in depths of 14 to 18m, clay, off Maviken, a small

craft harbor located on the N side of the inlet. Vessels entering may pass either N or S of Laskaren and Orana.

Caution.—Several islands along this stretch of coast, including Hogbonden, Hoglosmen, Furan, and Gnaggen have been designated as nature reserves.

6.45 Gnaggen Light (62°57'N., 18°37'E.) is shown from a structure standing on the N part of a small island of the same name lying 6 miles NE of Hogbonden Light. A detached shoal, with a least depth of 11.5m, lies about 1 mile E of the light.

Storgrund, with rocks awash at its SW end, lies between 0.5 mile and 1.5 miles SW of Gnaggen Light. This shoal bank is marked at the SW end by a buoy.

The mainland coast between Gnaggen Light and Skagsudde, about 18 miles NE, is mostly high and wooded. The shore is fronted by a chain of large islands and numerous rocky shoals through which several channels pass. A number of small craft harbors, fishing boat harbors, and marinas are situated among these islands. Only the outer islands and dangers are described below.

Ulvoama (63°01'N., 18°38'E.) consists of Norra Ulvon and Sodra Ulvon, two large wooded islands, which are separated from each other by Ulvosundet, a narrow strait. The S end of Sodra Ulvon is situated 1.5 miles N of Gnaggen Light.

Norra Ulvo Kasberg, a flat-topped hill, rises near the N end of Norra Ulvon, the N island. It is 141m high and conspicuous from seaward.

Askaret, a bare light-colored island, lies across the NE entrance of Ulvosundet and is marked by a light at the N side. This narrow strait can be entered by small vessels with local knowledge. Entrance channels pass N and S of Askaret and are authorized for drafts up to 6m and 4m, respectively. Anchorage can be obtained, in depths of 18 to 25m, clay, off **Ulvohamn** (63°01'N., 18°39'E.) ([World Port Index No. 26690](#)), a small fishing harbor, situated on the N side of the strait. The entrance channel at the SW end of the strait is authorized for drafts up to 2.5m.

Ytternasan Light (62°58'N., 18°33'E.) is shown from a prominent tower, 8m high, standing on the N entrance point of Omnefjärden, 2 miles WNW of Gnaggen Light.

Ullangersfjärden (63°01'N., 18°25'E.), a large inlet entered 2.5 miles N of Ytternasan Light, is deep and clear of dangers. Norrfjärden and Dockstafjärden indent the N side of this inlet.

Mjällomberget, 282m high, rises on the S shore of the inlet, 4.7 miles WNW of Ytternasan Light. This hill is prominent from seaward and its summit is surmounted by a conspicuous mast.

Valaberget, 151m high, rises on the S part of the peninsula situated between Norrfjärden and Dockstafjärden, 5.7 miles NW of Ytternasan Light. Varnsberget, 265m high, stands 0.7 mile NNW of Valaberget. These two hills are visible from seaward but are reported to be not easy to identify at a distance.

Skuleberget, 296m high, stands about 1.3 miles N of the head of Dockstafjärden, 2.7 miles NNW of Varnsberget. This hill, with a flat top and steep sides, is easy to identify, but it is hidden by other hills when bearing more than NW.

Ice usually obstructs navigation from January to April within the inlet.

Askja (63°01'N., 18°13'E.), a small harbor, lies at the head of the inlet. There is a quay, 45m long, with depths of 3 to 4m

alongside. Vessels may anchor off the harbor, in depths of 9 to 15m, clay.

Docksta (63°03'N., 18°20'E.), a former loading place, lies at the head of Dockstafjorden and contains a small shipyard. Anchorage can be taken by large vessels, in depths of 10 to 16m, clay, secured to stern moorings.

The channels leading to Askja and Docksta are authorized for drafts up to 10m.

Caution.—Two submarine power cables, which may best be seen on the chart, extend WSW between the SW side of Sodra Ulvon and the mainland.

6.46 Flasan Light (63°01'N., 18°41'E.) is shown from a prominent tower, 7m high, standing on an islet of the same name lying 0.7 mile E of the N end of Sodra Ulvon, 4.6 miles NNE of Gnaggen Light.

Storgrunden, a large shoal with a least depth of 6.5m, lies centered about 1.5 miles off the E side of Sodra Ulvon, 2.3 miles S of Flasan Light.

Varnsinsklubbarna, fringed by foul ground, lies about 2.1 miles NE of the N extremity of Norra Ulvon and at the NE end of a chain of islets and shoals, which extends between 1.2 miles and 5 miles NNE of Flasan Light.

Skagsudde Light (63°11'N., 19°01'E.) is shown from a prominent tower, 26m high, standing on a point at the S end of a small, relatively low peninsula. The peninsula may be identified by its dark trees and, on nearer approach, by Skag Beacon, which consists of a stack of poles in the form of a cairn. This beacon stands on a barren hill, which rises about 1 mile NNW of the point. An area of foul ground, with two islets, extends up to about 2 miles WNW of the point.

Skaghallan Light (63°11'N., 19°00'E.), equipped with a racon, is shown from a prominent tower, 6m high, standing on the westernmost rock of Sjalbadarna, an area of above-water rocks and foul ground lying centered 0.5 mile SSW of Skagsudde Light.

Skommaraskaten Light (63°12'N., 18°53'E.), marking the W side of the entrance to Ornskoldsvikfjorden, is shown from a prominent tower, 7m high, standing on the SE end of a mainland peninsula, 3.7 miles WNW of Skagsudde Light.

Raskarson (63°12'N., 18°53'E.), lying 0.5 mile SSE of Skommaraskaten Light, is marked by a light on its NE side and by a floodlit beacon on its NW side.

This small island is the northernmost of a chain of islands, islets, and foul ground, which extends SSW for about 6 miles. Skrubban, the southernmost island of the chain, lies 3.5 miles NE of the N extremity of Norra Ulvon. Some of the islands and islets in this chain are prominent from seaward due to their dark color.

Directions.—An inshore passage, authorized for drafts up to 10m, leads along this part of the coast. The route leads N and passes W of Hogbonden, Hoglosmen, and Furan. It continues NNE and passes W of Skotbadan and between Ytternasan Light and the SW end of Sodra Ulvon. The route then leads NNE and passes close W of Norra Ulvon. It continues NE across the outer approach to Natrafjorden and passes W of the chain of islands extending SSW from the vicinity of Skommaraskaten Light. The route then leads through a narrow

passage lying between Skommaraskaten Light and the NW side of Raskarson. Local knowledge is advised.

6.47 Kopmanholmen (63°10'N., 18°35'E.) ([World Port Index No. 26710](#)) is situated at the NW end of Natrafjorden, about 6 miles NNW of the N extremity of Norra Ulvon. This small port exports timber products and imports salt and fertilizer.

Ice.—Ice usually obstructs navigation from the middle of January to the middle of April.

Depths—Limitations.—Vessels from seaward should pass between Skrubban and Varmsinsklubbarna. Algon, 156m high, is an island lying in the approach, 2.5 miles SE of the port. The entrance channels leading W and N of this island are authorized, respectively, for drafts up to 10m and 9m.

The factory pier in the S part of the harbor provides two berths. The outer berth is 98m long and has depths of 9.2 to 9.5m alongside. The inner berth is 73m long and has depths of 4 to 6m alongside. Vessels up to 160m in length and 9m draft can be accommodated.

Aspect.—Balesudden, 116m high, rises at the S end of a peninsula, about 3.5 miles E of the port. This hill is easily identified by its reddish color and by its shape which, in certain lights, resembles the gable of a house.

Anchorage.—Vessels can anchor within the inner part of the fjord, in a depth of 30m, clay and sand, but the roadstead is exposed to SE winds.

Caution.—Submarine pipelines associated with a fish farm, which may be best seen on the chart, extend across the inner part of Natrafjorden.

Ornskoldsvik (63°17'N., 18°43'E.)

[World Port Index No. 26730](#)

6.48 Ornskoldsvik is situated at the NW end of Ornskoldsvikfjorden, about 9 miles NW of Skagsudde Light. This sheltered port exports timber products and engineering goods and imports oil, chemicals, and general cargo.

The port includes the loading places at Domsjo (63°15.8'N., 18°44.0'E.), Alfredshem (63°15.9'N., 18°42.9'E.), Horneborg (63°16.6'N., 18°43.0'E.), and Jarved (63°16.7'N., 18°44.8'E.).

Winds—Weather.—Strong SE winds raise the water level up to 0.5m above normal and N winds lower it a similar amount.

Ice.—The port is usually kept open all year round except during extreme ice conditions, which may occur from January to March.

Depths—Limitations.—Ornskoldsvikfjorden is entered between the E side of Raskarson and the S end of the island of Malmon, lying about 0.5 mile NE. Vessels from seaward approaching this entrance should head in a NW direction and pass about 1 mile SW of Skaghallan Light.

The route through the fjord leads N for about 2.3 miles and then in a WNW direction for 5.5 miles. The fairway channel leading to Ornskoldsvik and the other loading places is authorized for drafts up to 10m.

There are two main quays at Ornskoldsvik. Stenkajen, with a ro-ro ramp at the N end, is 345m long and has a depths of 7.5

to 9.1m alongside. Sliperikajen is 165m long and has depths of 5 to 6m alongside.

There are two timber-product quays at Domsjö. Export Quay, 130m long, has a depth of 7.2m alongside; and FS Quay, 100m long, has a depth of 4.8m alongside.

There are two piers at Alfredshem. The North Pier, used for handling chemicals, is 200m long and has depths of 5 to 6m alongside. The South Pier, used for handling oil, is 135m long and has depths of 7 to 8.5m alongside.

There are five main quays, with a ro-ro ramp, at Horneborg. The largest berth is 162m long and has a depth of 11m alongside. There is also an oil terminal jetty, with berthing dolphins. It is 70m long and has a depth of 10m alongside.

There is a T-shaped oil jetty at Jarved. It is 100m long and has a depth of 10.5m alongside.

Vessels up to 213m in length, 30.5m beam, and 10m draft can be accommodated within the port.

Aspect.—Faleberget (63°13'N., 18°40'E.), rising about 6 miles W of Skommarskatan Light, is 233m high and has steep sides. This hill is visible from a considerable distance to seaward, but is not easily distinguished from the other hills in the vicinity.

Asberget (63°18'N., 18°40'E.) stands 5 miles N of Faleberget. This hill is 217m high and a radio mast is situated on the summit. It is the westernmost of three large hills which, though visible from seaward, are not easily distinguished.

Hornoberget (63°16'N., 18°50'E.), rising 4.2 miles NNW of Skommarskatan Light, is 131m high. This hill, which has a flat top, falls steeply on its E side to a somewhat lower and long plateau. Because of its peculiar form, the hill can easily be identified when approaching Ornskoldsvik.

A conspicuous radio mast stands on a hill, on the S side of the narrows at Bonassund, about 2.6 miles SW of Hornoberget.

Pilotage.—The main pilot station at Ornskoldsvik provides pilotage for the area between latitude 62°50'N (not including Gaviksfjorden and Angermanalven) and a line bearing 140° through Norrbyskar (63°33'N., 19°52'E.). All requests for pilotage must be made through the VTS station at Lulea (see [paragraph 9.19](#)).

Pilotage is compulsory, as follows:

1. All Category 1 vessels.
2. Category 2 vessels of 90m in length or 16m beam and over.
3. Category 3 vessels of 100m in length or 17m beam and over.

In certain channels for Angermanalven, pilotage is compulsory, as follows:

1. All Category 1 vessels.
2. Category 2 vessels of 80m length, 15m beam, and 5m draft and over.
3. Category 3 vessels of 90m length, 16m beam, and 5.5m draft and over.

Pilots can be contacted by VHF and board about 2 miles S of the outermost shoal near Skagsudde (63°11'N., 19°01'E.).

Regulations.—Vessels must not exceed a speed of 7 knots when passing through the narrows at Bonassund (63°15.5'N., 18°46.1'E.).

Anchorage.—Vessels can anchor, in depths of 13 to 28m, clay and mud, in the N part of Ornskoldsviksfjorden. Vessels

can also anchor, in a depth of 20m, clay, off Domsjö, with their sterns moored to dolphins.

Caution.—Two submarine power cables, which may best be seen on the chart, extend NNW between the NW side of Raskarson island and the mainland.

A submarine pipeline extends across the channel in the vicinity of the narrows at Bonassund (63°15.5'N., 18°46.1'E.).

A spoil ground area, which may best be seen on the chart, lies close E of Alfredshem.

A defensive minefield area, the limits of which may best be seen on the chart, lies in the approaches to Ornskoldsvik, N of Raskarson island. Surface navigation is permitted, but anchoring and fishing are prohibited within this area. Vessels transiting through the area during a thunder storm do so at their own risk.

Ornskoldsviksfjorden to Jarnasudde

6.49 Sjalnoudde (63°20'N., 19°15'E.), a wooded point with steep light-colored sides, is located 10 miles NNE of Skagsudde Light. The coast between is wooded and fronted by numerous islets, rocks, and shoals.

Sjalnoudde, with the hills rising N of it, appears to be higher than Skagsudde. It is reported (2001) that several prominent wind generators stand in the vicinity of the point.

Mosjobergen rises 6.5 miles W of Sjalnoudde. The SE part has a round bare yellowish summit, 97m high. The NW part is formed by a wooded plateau, 155m high, which falls on its S side nearly perpendicularly from the summit for some distance and then slopes more gradually. This hill is visible from seaward and forms the best landmark along this stretch of coast.

Skags Flaser Light (63°12.4'N., 19°05.2'E.) is shown from a structure, 6m high, standing on the N part of an islet, 2.3 miles NE of Skagsudde Light.

Storgrund (63°12'N., 19°07'E.), a shoal with a least depth of 3.9m, lies about 1 mile SE of Skags Flaser Light and is marked by a buoy. Klinten, a shoal with a depth of 6.9m, lies 1 mile E of Skags Flaser Light and is marked by a buoy.

Nygrund, a shoal with a least depth of 1.4m, lies about 1.2 miles NNE of Klinten and is marked by a buoy.

Sjalbadan Beacon (63°15'N., 19°12'E.), 8m high and equipped with a racon, stands on an islet lying 4 miles NE of Skags Flaser Light. Finngrundet, a shoal area with rocks awash, extends up to about 1.5 miles ENE of the beacon and is marked by two buoys.

Skagshamn (63°13'N., 19°02'E.) ([World Port Index No. 26770](#)), a well-protected fishing harbor, lies 1.3 miles W of Skags Flaser Light. The channel leading through the coastal dangers is authorized for drafts up to 6m as far as the anchorage and up to 3m as far as the berths. Local knowledge is required. Ice usually obstructs navigation in the channel from February to April.

Anchorage may be obtained in the roadstead, in a depth of 30m, clay, and within the inner harbor, in a depth of 7m, clay.

Bergofjorden (63°15'N., 19°02'E.), entered 1.5 miles N of Skags Flaser Light, provides excellent shelter to small vessels. **Skedet** (63°15'N., 19°01'E.) ([World Port Index No. 26780](#)), a small harbor, is situated on the W side of this inlet. The entrance channel is authorized for drafts up to 4m. Local

knowledge is required. The inlet can be obstructed by ice from the middle of November to May. Anchorage may be obtained, in a depth of 10m, mud, off Skede.

Fanbyviken (63°20'N., 19°13'E.), a narrow inlet, is entered 1 mile W of Sjalnoudde. It provides anchorage to small vessels with local knowledge, in depths of 12 to 18m, clay. The entrance channel is authorized for drafts up to 6m. The inlet is only 300m wide and does not afford much swinging room.

Caution.—Local magnetic anomalies exist between Skagsudde Light and Sjalnoudde.

6.50 Husum (63°20'N., 19°09'E.) ([World Port Index No. 26790](#)) is situated 2.5 miles W of Sjalnoudde and 4.5 miles NNW of Sjalbadan Beacon. This small port imports limestone, sodium sulphate, and cement and exports timber products and turpentine.

Ice.—The harbor is often obstructed by ice from January to April. It is kept open except in extreme ice conditions.

Tides—Currents.—Higher water levels occur with protracted SE winds; and lower water levels occur with N winds. The current caused by the outflow of the rivers at the head of the inlet can be somewhat troublesome when mooring, especially in the spring.

Depths—Limitations.—From seaward, vessels should approach the harbor by heading W and passing about 1.2 miles S of Sjalnoudde. The main entrance channel is authorized for drafts up to 10.5m.

An inshore route, which leads NE and inside the outer dangers, is authorized for drafts up to 6m. Local knowledge is required.

In the S part of the harbor a pontoon jetty provides a berth, 90m long, with a depth of 10.2m alongside. It is connected to the shore by a bridge, 130m long.

Ravarukajen, a concrete quay, is situated close N of the pontoon jetty. The outer berth is 180m long and has a depth of 10.8m alongside. The inner berth has a fixed ro-ro ramp at the N end. It is 65m long and has a depth of 9m alongside.

Utlastningskajen, situated close N of Ravarukajen, is another concrete quay, with a ro-ro ramp at the S end. It is 300m long and has depths of 7 to 9m alongside.

Aspect.—The woodpulp factory and chimney standing on the E side of the harbor are conspicuous from seaward.

Pilotage.—Pilots are provided by the station at Ornskoldsvik (see [paragraph 6.48](#)). All requests for pilotage must be made through the VTS station at Lulea (see [paragraph 9.19](#)).

Anchorage.—Anchorage may be obtained, in depths of 7 to 17m, mud, in the harbor roadstead, but it is open to SE winds.

6.51 Between Sjalnoudde (63°20'N., 19°15'E.) and the SW approaches to Norra Kvarken (63°35'N., 20°52'E.), 30 miles E, a number of shoals and banks lie between 5 and 15 miles off the coast. These dangers are mostly steep-to and great care is necessary when navigating in their vicinity. Only the outermost are described below.

Vallinsgrundet Light (63°19'N., 19°25'E.) is shown from a prominent tower, 20m high, standing on a pinnacle rock lying about 5 miles E of Sjalnoudde.

Norra Langrogrunden (63°19'N., 19°41'E.) and Sodra Langrogrunden, 1 mile S, are located 7 miles E of Vallinsgrundet Light. These shoals and the waters lying E of them are described beginning in [paragraph 8.2](#).

Degerfjarden (63°24'N., 19°20'E.) is a large bay entered between Sjalnoudde and Langroudden, 8 miles NE. Anchorage may be obtained by vessels with local knowledge, in a depth of 18m, sand, close NNW of an islet lying on the E side near the head of the bay. The entrance channel, which passes close E of Sjalnoudde, is authorized for drafts up to 6m. With S winds, a swell sets into the anchorage and the holding ground cannot be depended on.

Langroudden (63°24'N., 19°30'E.) is a low and wooded point, but, in clear weather, it is very prominent from seaward.

Caution.—Firing practice, with live ammunition, occasionally takes place within an area extending 5 miles between ESE and SSE from a point located on the W side of Degerfjarden, about 7.5 miles N of Sjalnoudde.

6.52 Nordmalingsfjarden (63°28'N., 19°33'E.) is entered between Langroudden and Jarnasudde, a low wooded point located 4 miles ENE. This inlet is encumbered with numerous shoals in the S part, but there is an extensive clear area in the N part. Ice usually obstructs navigation in the inlet from December to April.

Storbadan Light (63°25'N., 19°35'E.) is shown from a prominent tower, 16m high, standing on an islet of the same name lying in the center of the entrance, 1.8 miles WSW of Jarnasudde.

The main channel leading N into Nordmalingsfjarden passes E of Storbadan Light. The fairway is authorized for drafts up to 7m as far as Rundvik and up to 3.7m as far as Notholmen. Local knowledge is required.

Vessels with local knowledge may obtain anchorage, in depths of 4 to 13m, mud, N of Flasarna, a group of three islets lying about 6 miles NNW of Jarnasudde.

Rundvik (63°32'N., 19°27'E.) ([World Port Index No. 26800](#)), a small loading place, is situated on the W side of Nordmalingsfjarden about 2 miles from its head. Vessels can anchor, in depths of 4.5 to 6m, clay and sand, off the harbor.

A concrete pier provides berths on both sides. The N berth is 100m long, with depths of 3.2 to 5m alongside the inner part; the outer part, 70m long, has depths of 5 to 8m alongside. The S berth is 110m long, with depths of 3.9 to 5m alongside the inner part; the outer part, 70m long, has depths of 6 to 8m alongside. A mooring dolphin, marked by a light, is situated close off the pierhead. Vessels up to 165m in length and 7m draft can be accommodated.

Notholmen (Nordmaling) (63°34'N., 19°29'E.) ([World Port Index No. 26810](#)), a small harbor, lies at the head of the inlet. Vessels with local knowledge may anchor, with stern moorings, in depths of 4 to 12m, close S of the harbor. There is a concrete quay, 127m long, with depths of 4 to 4.5m alongside.